OWNER'S OPERATING MANUAL

PlasmaWall™

PL-43DHD
PL-50DHD

Flat Panel Plasma Display Monitor
with

WideVision™

and
Digital High Definition™ Controller
with Vivix II™ Technology

Software Version 2.00

RUNCO

THE WORLD'S FINEST HOME THEATER PRODUCTS™

THREE YEAR LIMITED WARRANTY

For Plasma Displays

Congratulations on your purchase of a Runco video product and welcome to the Runco family! We believe Runco produces "The World's Finest Home Theater Products." With proper installation, setup and care, you should enjoy many years of unparalleled video performance.

This is a LIMITED WARRANTY as defined in the Magnuson-Moss Warranty Act. Please read it carefully and retain it with your other important documents.

WHAT IS COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY:

SERVICE LABOR: Runco will pay for service labor by a Runco Authorized Service Center when needed as a result of a manufacturing defect for a period of three (3) years from the effective date of delivery to the end user (excluding the plasma glass panel).

PARTS (not including plasma glass panel): Runco will provide new or rebuilt replacement parts for the parts that fail due to defects in materials or workmanship for a period of three (3) years from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

PLASMA GLASS PANEL: Runco will pay for service labor by a Runco Authorized Service Center when needed as a result of a manufacturing defect for a period of one (1) year from the effective date of delivery to the end user. In addition, Runco will provide new or rebuilt replacement parts for the parts that fail due to defects in materials or workmanship for a period of one (1) year from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

WHAT IS NOT COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY:

Image burn-in on plasma display panels is specifically excluded from coverage under this Limited Warranty. Image burn-in is the result of misuse of the product and therefore cannot be repaired under the terms of this Limited Warranty.

Normal viewing material such as television/satellite broadcasts, videotape or DVDs (not put into pause for extended periods of time) will not cause damage to your display under normal conditions. Many DVD players are also equipped with screen savers for this reason.

TO AVOID IMAGE RETENTION (Burn-in): Please ensure that still images are left on your plasma display panel for no more than a few minutes. Also ensure that images displayed in the 4:3 aspect ratio mode (black or gray stripes, but no picture information is present on the left and right edges of the screen) are used as infrequently as possible. This will prevent permanent image burns on your plasma display panel, which can be seen permanently under certain conditions once burn-in has occurred.

The types of images to avoid include video games, still images and computer screens with stationary tool bars and icons. (This is why computers are equipped with screen savers – to prevent still images from burning into the monitor's phosphors after being displayed continuously for an extended period of time).

This Limited Warranty only covers failure due to defects in materials and workmanship that occur during normal use and does not cover normal maintenance. This Limited Warranty does not cover cabinets or any appearance items; failure resulting from accident, misuse, abuse, neglect, mishandling, misapplication, faulty or improper installation or setup adjustments; improper maintenance, alteration, improper use of any input signal; damage due to lightning or power line surges, spikes and brownouts; damage that occurs during shipping or transit; or damage that is attributed to acts of God. In the case of remote control units, damage resulting from leaking, old, damaged or improper batteries is also excluded from coverage under this Limited Warranty.

CAUTION: THIS LIMITED WARRANTY ONLY COVERS RUNCO PRODUCTS PURCHASED FROM RUNCO AUTHORIZED DEALERS. ALL OTHER PRODUCTS ARE SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY. MOREOVER, DAMAGE RESULTING DIRECTLY OR INDIRECTLY FROM IMPROPER INSTALLATION OR SETUP IS SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY.

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Runco limits its obligations under any implied warranties under state laws to a period not to exceed the warranty period. There are no express warranties. Runco also excludes any obligation on its part for incidental or consequential damages related to the failure of this product to function properly. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages. So the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

EFFECTIVE WARRANTY DATE:

This warranty begins on the effective date of delivery to the end user. For your convenience, keep the original bill of sale as evidence of the purchase date.

IMPORTANT – WARRANTY REGISTRATION:

Please fill out and mail your warranty registration card. It is imperative that Runco knows how to reach you promptly if we should discover a safety problem or product update for which you must be notified.

CONTACT A RUNCO AUTHORIZED SERVICE CENTER TO OBTAIN SERVICE:

Repairs made under the terms of this Limited Warranty covering your Runco video product will be performed at the location of the product, during usual working hours, providing location of product is within normal operating distance from a Runco Authorized Service Center. In some instances it may be necessary for the product to be returned to the Runco factory for repairs. If, solely in Runco's judgment, location of product to be repaired is beyond normal operating distance of the closest Runco Authorized Service Center, or the repair requires the unit be returned to the Runco factory, it is the owner's responsibility to arrange for shipment of the product for repair. These arrangements must be made through the selling Runco Dealer. If this is not possible, contact Runco directly for a Return Authorization number and shipping instructions. Runco will return product transportation prepaid in the United States, unless no product defect is discovered. In that instance, shipping costs will be the responsibility of the owner.

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Runco International products are manufactured under one or more of the following patents: US. Patent 6755540 and Other Patents Pending.

ADDITIONAL INFORMATION:

To locate the name and address of the nearest Runco Authorized Service Center, or for additional information about this Limited Warranty, please call or write:

RUNCO INTERNATIONAL, INC.
Attn: Customer Service Department
2900 Faber Street
Union City, CA 94587
Ph: (510) 324-7777
Fax: (510) 324-9300
Toll Free: (800) 23-RUNCO

RUNCO VIDEO-PRODUCT INFORMATION
RETAIN THIS INFORMATION FOR YOUR RECORDS

_____ _____

Model Purchased Date

_____

Serial Number

_____

Runco Authorized Dealer Name

_____

Address

_____ _____ _____

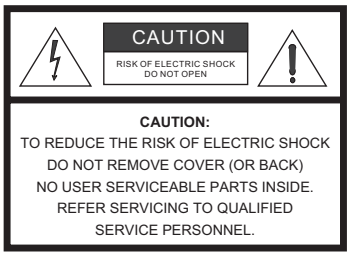
City State/Province Postal Code

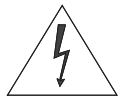
_____ _____

Phone Fax

Safety Precautions

Thank you for your purchase of this quality Runco product! It has been designed to provide you with the quality of video that is expected in a home theater. This manual is your guide through the menus and operation. For the best performance, please read it carefully and keep it handy for future reference.





WARNING
This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

To turn off main power, be sure to remove the plugs from power outlets. The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS, UNLESS THE PRONGS CAN BE FULLY INSERTED. REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING

This equipment has been tested and found to comply with the limits for a Class 'B' digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Installation Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be required to correct the interference at his own expense.

DOC Compliance Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Please read and follow the safety precautions listed below to ensure the equipment is free from damage, and to ensure that no injury will occur as a result of improper use.

- Do not insert any object, especially metal or liquids, into the plasma display.
- Do not place any objects containing water or any other liquid on top of the plasma display.
- Do not place the units in direct sunlight, near heaters or in extremely dusty or humid locations.
- Do not install this system outdoors or otherwise exposed to the elements.
- Do not place heavy objects on top of the plasma display.
- If the power cord is damaged or frayed in any way, electrical shock and/or fire may result. Do not place objects on the power cord, and keep the cord away from heat-emitting devices. Should the power cord become damaged in any way, please contact your Runco Dealer for a replacement cord.
- Do not remove the cover of the plasma display for any reason. If any problems arise with the unit, please contact a Runco Dealer or Runco International for service. Removing the covers will void the warranty.

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1. Introduction

1.1 About This Manual

This Owner's Manual describes how to install, set up and operate the Runco PlasmaWall Flat-Panel Plasma Display Monitor and DHD Controller (Models PL-43DHD and PL-50DHD). It describes the features and functions available with DHD Controller Software version 2.0 and later.

Throughout this manual, the Runco PlasmaWall Flat-Panel Plasma Display Monitor and DHD Controller are referred to collectively as the "PlasmaWall." The information in this manual applies to both the PL-43DHD and PL-50DHD, except where otherwise indicated.

➤ *Target Audience*

Runco has prepared this manual to help home theater installers and end users get the most out of the PlasmaWall.

Runco has made every effort to ensure that this manual is accurate as of the date it was printed. However, because of ongoing product improvements and customer feedback, it may require updating from time to time. You can always find the latest version of this and other Runco product manuals on-line, at www.runco.com.

➤ *If You Have Comments About This Manual...*

Runco welcomes your comments about this manual. Send them to techpub@runco.com.

➤ *Textual and Graphic Conventions*

Text Conventions: The following conventions are used in this manual, in order to clarify the information and instructions provided:

- Remote control button identifiers are set in upper-case bold type; for example, "Press **EXIT** to return to the previous menu."
- All keys with functional names are initial-capped, set in bold type and enclosed in angle brackets. These keys are the following: **<Enter>, <Spacebar>, <Control>, <Esc>** and **<Tab>**.
- **<Enter>** indicates that you may press either the RETURN or ENTER key on your computer keyboard if it has both keys.
- Computer input (commands you type) and output (responses that appear on-screen) is shown in monospace (fixed-width) type; for example: "To change the aspect ratio to Anamorphic, type `ANAMORPHIC <Enter>`."

In addition to these conventions, underlining, boldface and/or italics are occasionally used to highlight important information, as in this example:

Note

*A carriage return **must** be used after each command or string.*

Graphic Conventions: These symbols appear in numerous places throughout the manual, to emphasize points that you must keep in mind to avoid problems with your equipment or injury:

Tip — *TIPS highlight time-saving short cuts and helpful guidelines for using certain features.*

Note — *NOTES emphasize text with unusual importance or special significance. They also provide supplemental information.*

Caution — *CAUTIONS alert users that a given action or omitted action can degrade performance or cause a malfunction.*

WARNING — *WARNINGS appear when a given action or omitted action can result in damage to the equipment, or possible non-fatal injury to the user.*

DANGER! — *DANGER appears when a given action can cause severe injury or death.*

1.2 Using This Manual

Use the following table to locate the specific information you need in this manual.

If you need...	... Turn to page:
Information about obtaining service	iv
General information about the PlasmaWall Flat-Panel Plasma Display Monitor and DHD Controller	3
Installation instructions	15
First-time configuration instructions	29
Advanced configuration instructions	41
Troubleshooting tips	47
Specifications for the PlasmaWall Flat-Panel Plasma Display Monitor and DHD Controller	55

1.3 Description, Features and Benefits

The PlasmaWall PL-43DHD and PL-50DHD flat-panel plasma monitors bring outstanding picture quality to their respective size categories with true, high-definition native resolution of 1024 x 768 (PL-43DHD) or 1280 x 768 (PL-50DHD) for no-compromise viewing of any video source.

The PlasmaWall is supplied with Runco's next-generation, Digital High Definition (DHD) Controller, featuring advanced Vivix II™ processing. This controller produces stunning video imagery, elevating even standard NTSC material to near high-definition levels.

Multiple aspect ratio control includes Runco's VirtualWide™ for viewing 4:3 material in widescreen with no loss of picture quality. The DHD provides for a pure digital signal path from input to output, making this system ready for Runco's exclusive LiveLink™ DVI cable solution to preserve HD signal quality over long runs.

The PlasmaWall's black level performance and shadow detail capability have been enhanced with Active Gray Scale Rendering to provide smoother transitions from dark to light, resulting in richly detailed textures even in shadowy scenes.

The PlasmaWall is easily integrated into custom installation systems. Both RS-232C and IR control interfaces are incorporated for simple automation. Its profile is less than 4-1/2 inches thin for wall-mounting simplicity.

◄ *Key Features and Benefits*

The PlasmaWall offers these key features and benefits:

- Native Resolution: 1280 x 768 (PL-50DHD) or 1024 x 768 (PL-43DHD)
- Multiple Aspect Ratios with VirtualWide™ Mode
- 160 degree horizontal/vertical viewing angle
- Accepts all DTV formats (via outboard decoder), including 1080i, 720p and 480p
- Less than five inches deep
- DVI Input with High-bandwidth Digital Content Protection (HDCP)
- Exceptional detail and artifact-free video enhancement
- Vivix™ video processing with 3:2 film detection circuitry

Parts List ➤ Your PlasmaWall is shipped with the following items. If any items are missing or damaged, please contact your Runco dealer or Runco Customer Service at (800) 23-RUNCO.

- PlasmaWall Flat-Panel Plasma Display Monitor and DHD Controller
- AC Power Cords (2)
- Remote Control Unit and two (2), AAA-size batteries
- Service Remote Control Unit and two (2), AA-size batteries
- RJ-11 Telephone Cable, 50 feet (15.24 meters)
- Serial Port Adapter, RJ-11 Female to DB-9 Female
- Rack-mount hardware for the DHD Controller
- Cleaning Cloth
- Cable Ties (2)
- Warranty information and registration card
- Runco PL-43DHD and PL-50DHD Owner's Operating Manual (this document)

Optional Accessories:

- Wall Mount Kit
- Table Stand
- LiveLink™ DVI Cabling System

2. Controls and Functions

2.1 PlasmaWall at a Glance

Figure 2-1 shows the locations of the PlasmaWall front-panel controls and indicators.

◄ *Controls and Indicators*

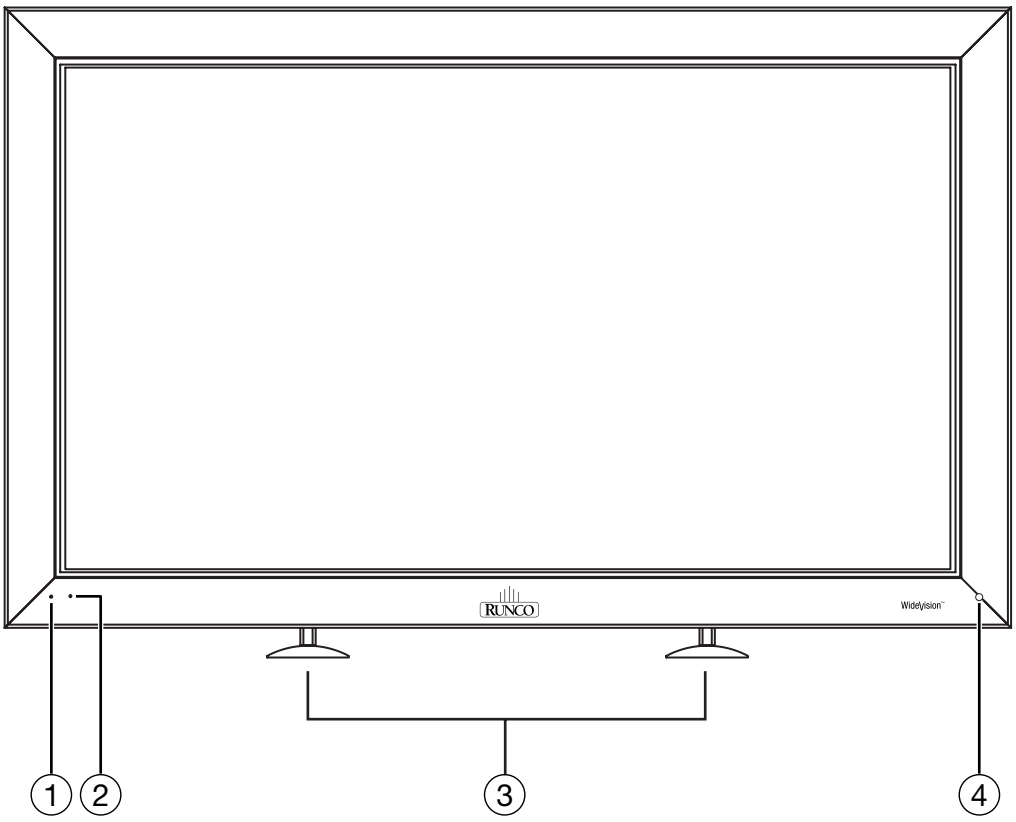


Figure 2-1. PlasmaWall Front-Panel Controls and Indicators

1. **POWER INDICATOR**
   - Lights green to indicate normal operation;
   - Flashes green to indicate error conditions;
   - Flashes green once per second when the power management feature is active.
2. **STANDBY INDICATOR**
   - Lights red to indicate that the PlasmaWall is in standby mode;
   - Flashes red to indicate error conditions.
3. **DISPLAY STAND**
   Optional accessory for tabletop installations.
4. **REMOTE CONTROL SENSOR**
   Receives the signals from the Setup remote control.

Connectors ➤ Figure 2-2 shows the locations of the PlasmaWall connectors and main power switch.

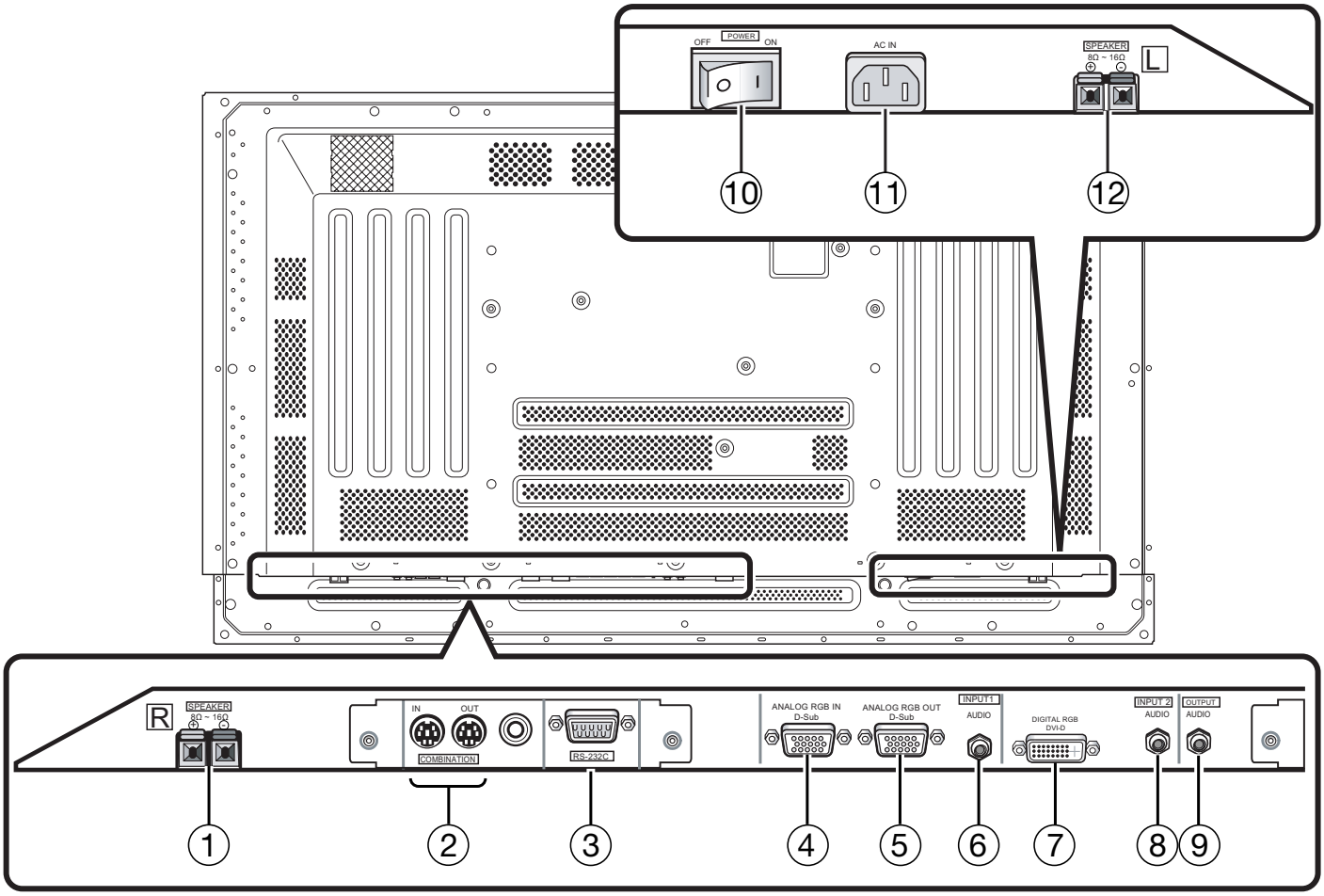


Figure 2-2. PlasmaWall Connectors

1. **EXTERNAL SPEAKER OUTPUT (RIGHT)**
   Not used. Connect speakers to an external audio amplifier/receiver.
2. **COMBINATION IN/OUT**
   Used to control multiple PlasmaWall monitors collectively. Use a 6-pin, mini-DIN cable (all pins wired straight-through).
3. **RS-232C (9-pin, male D-Sub)**
   Connect the RS-232 OUT port on the DHD Controller to this input.
4. **ANALOG RGB IN (INPUT 1) (15-pin D-Sub)**
   Connect the RGBHV (5xBNC) output from the DHD Controller here.
5. **ANALOG RGB OUT (INPUT 1) (15-pin D-Sub)**
   If desired, connect this ouput to the RGB input of a second display device.

Note

This output is not active when the PlasmaWall is off or in standby mode.

6. **AUDIO (INPUT 1) (3.5-mm stereo mini jack)**
   Not used with this model. Connect the audio outputs from your sources to an external audio receiver.
7. **DIGITAL RGB (INPUT 2) (DVI-D)**
   HDCP-compliant digital video input. **Connect the DVI output from the DHD Controller to this input.**
8. **AUDIO (INPUT 2) (3.5-mm stereo mini jack)**
   Not used with this model. Connect the audio outputs from your sources to an external audio receiver.
9. **AUDIO (OUTPUT) (3.5-mm stereo mini jack)**
   Not used with this model.
10. **MAIN POWER SWITCH**
    Connects or disconnects the PlasmaWall from the AC power source.
11. **POWER INPUT (100 to 240 VAC)**
    Connect the PlasmaWall to power here, using the included power cord.
12. **EXTERNAL SPEAKER OUTPUT (LEFT)**
    Not used. Connect speakers to an external audio amplifier/receiver.

2.2 DHD Controller Front Panel

Figure 2-3 shows the controls and indicators on the DHD Controller front panel; the paragraphs that follow describe them.

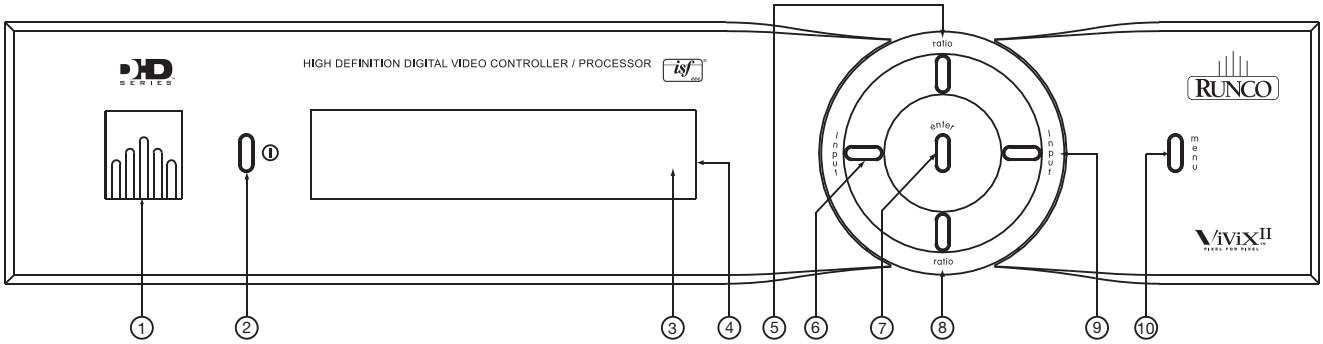


Figure 2-3. DHD Controller Front Panel

1. **RUNCO ICON**
   Lights red to indicate that the DHD Controller is in standby mode; lights blue to indicate that the unit is on.
2. **POWER BUTTON**
   Press once to toggle from standby mode to on mode. Press it again to return to standby mode. For a discrete on or off command, you can use the direct access buttons on the remote control.
3. **IR SENSOR**
   Receives IR commands from the remote.
4. **VACUUM FLUORESCENT DISPLAY**
   Can be used instead of the On-Screen Display (OSD). Displays currently-selected menu or – if no menu is selected – the current source, signal format (NTSC or PAL), input resolution and aspect ratio.

5. **UP BUTTON**
   Use to direct-select aspect ratios or move the menu cursor up in the On-Screen Display. When no menus are present on-screen, the **UP** button toggles you through aspect ratios in the following order:
   Anamorphic - Standard (4:3) - Letterbox - VirtualWide - Cinema

   (For more information about aspect ratios, refer to Table 4-1.)

6. **LEFT BUTTON**
   Used to direct select inputs or move the menu cursor left in the On Screen Display. When no menu is present on-screen, the **LEFT** button toggles you through the different sources, in this order:
   HD Pass Thru 2 - HD Pass Thru 1 - DVI 2 - DVI 1 - HD/RGB2 - HD/RGB1 - Component SD - S-Video 2 - S-Video 1 - Composite

7. **ENTER BUTTON**
   When an item is highlighted on the On-Screen Display, the **ENTER** button selects the item.

8. **DOWN BUTTON**
   Use to direct select aspect ratios or move the menu cursor down in the On-Screen Display. When no menu is present on-screen, this button toggles you through the different aspect ratios, in this order:
   Cinema - VirtualWide - Letterbox - Standard (4:3) - Anamorphic

9. **RIGHT BUTTON**
   Used to direct select inputs or move the menu cursor right in the On Screen Display. When no menus are present on-screen, the **RIGHT** button toggles you through the different sources, in this order:
   Composite - S-Video 1 - S-Video 2 - Component SD - HD/RGB 1 - HD/RGB 2 - DVI 1 - DVI 2 - HD Pass Thru 1 - HD Pass Thru 2

10. **MENU BUTTON**
    Pressing the **MENU** button brings up the main menu. Also, if you are in an adjustment mode or function, pressing **MENU** brings the menu back one level.

2.3 DHD Controller Rear Panel

Figure 2-4 shows the rear connector panel on the DHD Controller.

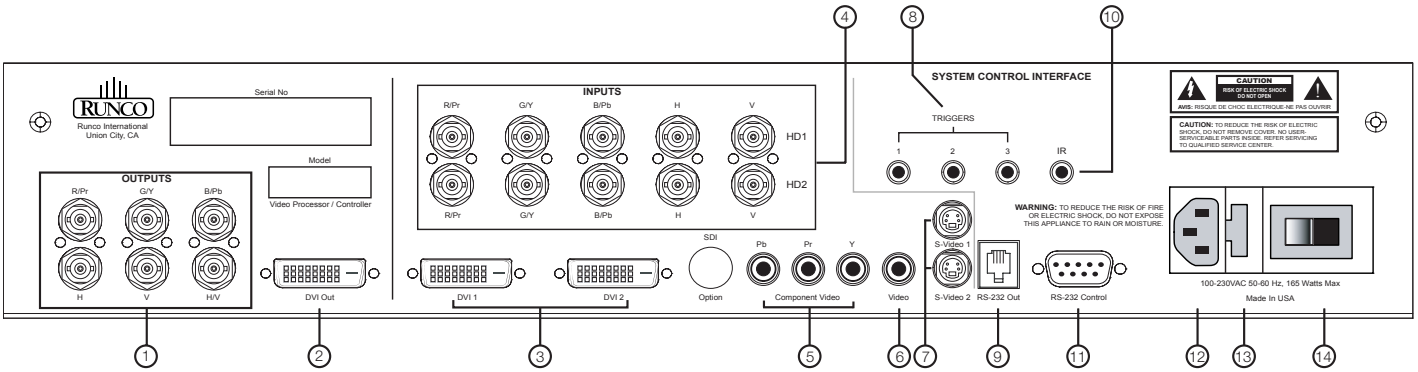


Figure 2-4. DHD Controller Rear Panel

Outputs ➤

1. **ANALOG OUTPUTS (RGBHV)**
   Connect these to the **ANALOG RGB IN** input of the PlasmaWall, using a 5 x BNC-to-VGA breakout cable.
2. **DVI OUT**
   Connect this to the **DIGITAL RGB** (DVI-D) input on the PlasmaWall.

Inputs ➤

3. **DVI 1 / DVI 2 (Digital)**
   Two, HDCP-compliant digital video inputs for connecting a DVD player or HD tuner with a DVI or HDMI output.
4. **HD1 / HD2 (Analog BNC connectors)**
   Five, BNC connectors for connecting either RGB or component high-definition television signals. The PlasmaWall automatically detects the signal format: RGB(HV) or YPrPb, 480p, 720p, 480i, 576i or 1080i.
5. **COMPONENT VIDEO (RCA connectors)**
   Standard Definition (480i/576i) Component (YPrPb) input. This is the input for component video from sources such as DVD players.

Tip

For best results, do not run your DVD player in progressive mode.

6. **COMPOSITE VIDEO INPUT**
   Standard composite video input for connecting a VCR, camcorder, laser disc player or other composite video source.
7. **S-VIDEO 1 / S-VIDEO 2**
   Two, standard S-Video inputs for connecting a DVD player, satellite receiver or Super VHS (S-VHS) VCR.
8. **12-VOLT (750 mA) TRIGGER OUTPUTS**
   Connection for up to three (3), 12-volt trigger-controlled devices.
9. **RS-232 OUTPUT (6-Wire, RJ-11 jack)**
   Connect this to the **RS-232C** input of the PlasmaWall, using the supplied serial port adapter and communication cable.
10. **IR**
    Wired input from an external remote control or infrared receiver. It is a 3.5-mm, mini phono jack, wired as follows:
    Ring = +5V
    Tip = IR Input
    Sleeve = Ground

Note

When an external remote control or infrared receiver is connected to the wired IR input, the IR sensor on the front of the DHD Controller is disabled.

11. **RS-232 CONTROL PORT**
    A female, 9-pin D-sub connector for interfacing with a PC or home theater automation/control system.
12. **POWER INPUT (100 to 240 VAC)**
    Connect the DHD Controller to power here.
13. **MAIN AC FUSE**
    This is the main AC input fuse (5mm x 20mm, 500 mA, 250V slow-blow).
14. **MAIN POWER SWITCH**
    Disconnects or applies power to the DHD Controller.

2.4 DHD Controller Remote Control

Figure 2-5 shows the DHD Controller remote control, and the paragraphs that follow describe its functionality.

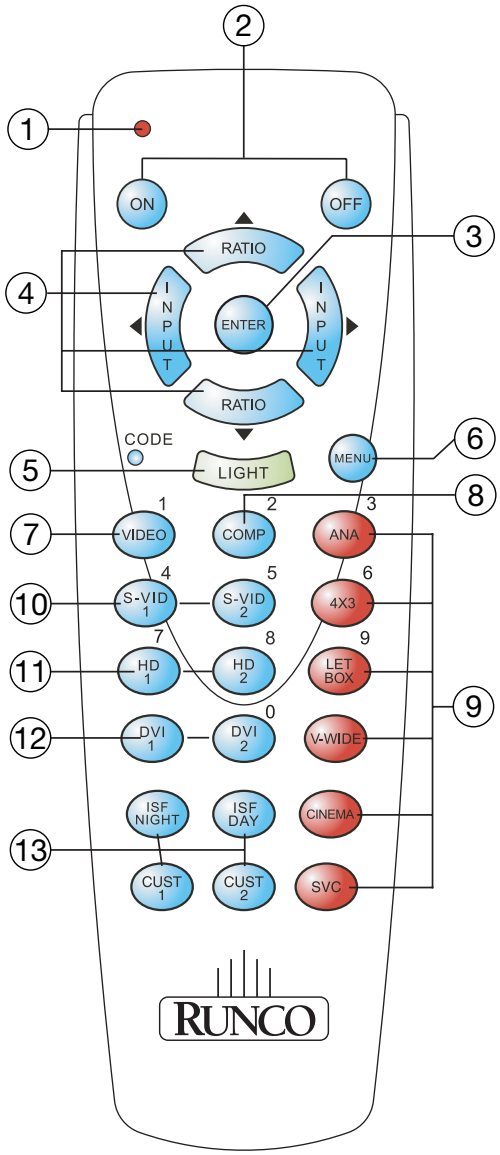


Figure 2-5. DHD Controller Remote Control

1. **IR OUTPUT INDICATOR**
   Lights when a button is pressed to indicate that an IR signal is being transmitted.
2. **ON / OFF**
   Press to turn the PlasmaWall on or off.
3. **ENTER**
   Press to select a highlighted menu item or confirm a changed setting.
4. **Cursor Keys (▲, ◀, ▼, ▶)**
   Use these buttons to select items or settings, adjust settings or switch display patterns.

   When no menus are present on-screen, the **UP** and **DOWN** buttons toggle through the available aspect ratios, in this order:
   UP Button = Anamorphic - Standard (4:3) - Letterbox - VirtualWide - Cinema
   DOWN Button = Cinema - VirtualWide - Letterbox - Standard (4:3) - Anamorphic

   Likewise, the **LEFT** and **RIGHT** buttons toggle through the different source inputs, in this order:
   LEFT Button = HD Pass Thru 2 - HD Pass Thru 1 - DVI 2 - DVI 1 - HD/RGB2 - HD/RGB 1 - Component SD - S-Video 2 - S-Video 1 - Composite
   RIGHT Button = Composite - S-Video 1 - S-Video 2 - Component SD - HD/RGB 1 - HD/RGB 2 - DVI 1 - DVI 2 - HD Pass Thru 1 - HD Pass Thru 2
5. **LIGHT**
   Press to illuminate the buttons. (Not available on all models.)
6. **MENU**
   Press this button to access the OSD controls, or to exit the current menu and return to the previous one.
7. **VIDEO (1)**
   Press to select Composite video input as the source or to enter the numeric character “1.”
8. **COMP (Component) (2)**
   Press to select Component SD (480i/576i) video input as the source or to enter the numeric character “2.”

9. **Aspect Ratio Selection Buttons**
   Use the red buttons to select an aspect ratio directly or to enter numeric characters, as follows:

   ANA (Anamorphic) (3)
   For viewing 16:9 DVDs or HDTV programs in their native aspect ratio.

   4X3 (Standard 4:3) (6)
   Scales the input signal to fit 4:3 display mode in the center of the screen.

   LETBOX (Letterbox) (9)
   For viewing LaserDisc movies or non-anamorphic DVDs on a 4:3 screen.

   V-WIDE (VirtualWide)
   Enlarges a 4:3 image horizontally in a NON-linear fashion to fit 16:9 full screen display.

   CINEMA
   For viewing 2.35:1 source material on a 1.78:1 (16:9) screen. The upper and lower portions are masked.

   SVC
   Not used.

10. **S-VID 1 (4) / S-VID 2 (5) (S-Video)**
    Press to select an S-Video input or to enter the numeric character “4” or “5.”

11. **HD 1 (7) / HD 2 (8)**
    Press to select a HD (RGBHV or YPbPr component) input or to enter the numeric character “7” or “8.”

12. **DVI 1 / DVI 2 (0)**
    Press to select a Digital Video input. Press **DVI2** to enter the numeric character “0.”

13. **Memory Preset Buttons:**

    ISF NT (Night)
    Press to recall settings for the current input from the “ISF Night” memory preset.

    ISF DAY
    Press to recall settings for the current input from the “ISF Day” memory preset.

    CUST 1
    Press to recall settings for the current input from the “Custom 1” memory preset.

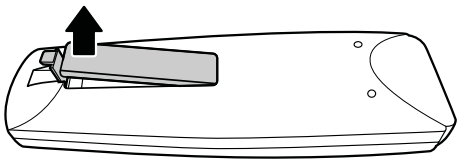
    CUST 2
    Press to recall settings for the current input from the “Custom 2” memory preset.

3. Installation

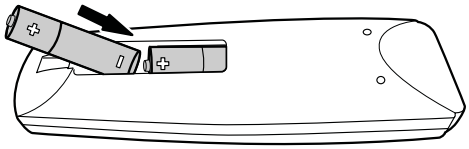
3.1 Remote Control

To install batteries in the remote control:

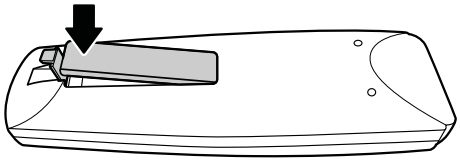
1. Press down the tab on the cover and pull the cover in the direction of the arrow.



2. Insert the included batteries. Ensure that the polarities correctly match the ⊕ and ⊖ markings inside the battery compartment.



3. Insert the lower tab of the cover into the opening, and press down the cover until it clicks in place.



- When installing batteries, make sure that the battery polarities are correct.
- Do not mix an old battery with a new one or different types of batteries.
- If you will not use the remote control for a long time, remove the batteries to avoid damage from battery leakage.

➤ ***Notes on Batteries***

The remote control can be used to control the PlasmaWall within the ranges shown in Figure 3-1.

➤ ***Notes on Remote Control Operation***

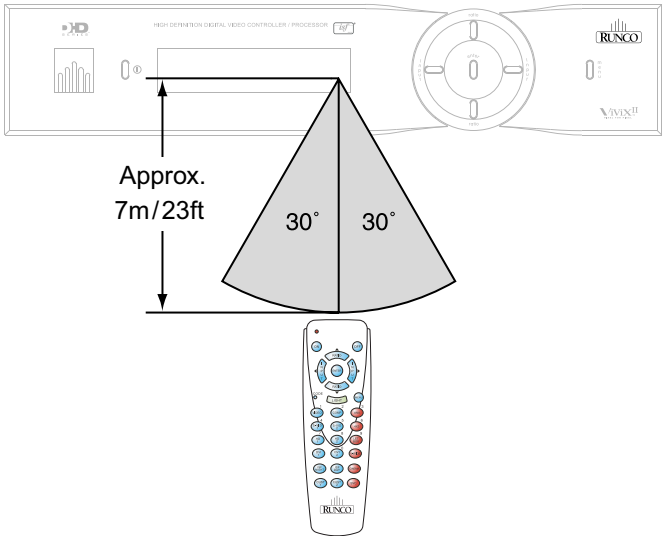


Figure 3-1. Available Range of the Remote Control

- Do not drop the remote control or expose it to moisture or high temperature.
- The remote control may malfunction under a fluorescent lamp. If that occurs, move the plasma display away from the fluorescent lamp.
- Make sure that there is nothing obstructing the infrared beam between the remote control and the IR receiver on the plasma display.

Note

The signal from the remote control can be reflected by walls or other surfaces.

- If the effective range of the remote control decreases, or it stops working, replace the batteries with new ones.
- Ambient conditions may possibly impede the operation of the remote control. If this happens, point the remote control at the plasma display and repeat the operation.

3.2 Quick Setup

Table 3-1 gives a quick overview of the PlasmaWall installation process. The sections following this one provide detailed instructions.

Note

Installation should be performed by a qualified custom video installation specialist.

Table 3-1. Installation Overview

Step	Procedure	For Details, refer to page...
1	Mount the PlasmaWall on a wall or table stand	18
2	Connect the DHD Controller to the PlasmaWall	21
3	Connect signal sources to the DHD Controller	23
4	Connect external controller to DHD Controller RS-232 port (optional)	27
5	Apply power to the PlasmaWall	29
6	If using the PlasmaWall with a PC, adjust PC display properties	30
7	Display calibration: adjust the following ***for each input***, starting with Comonent SD; save settings when finished: • Aspect ratio • Brightness • Contrast • Color level • Tint • Sharpness	34 through 42

3.3 Installation Considerations

Proper installation of your PlasmaWall will ensure the highest possible picture quality. Whether you are installing the PlasmaWall temporarily or permanently, you should take the following into account to ensure that it performs optimally.

High-Altitude Operation ➤

Due to the design of all plasma glass panels made by every manufacturer, and the interaction between ambient air pressure and the plasma gases contained inside of the panel, reliable operation of your plasma display cannot be assured during operation at certain high-altitude locations.

Runco has found this plasma monitor to operate reliablly at altitudes of up to 5000 MSL (mean sea level). At elevations higher than this, each panel may react differently, depending upon the altitude, air pressure, humidity and other meteorological factors.

For this reason, Runco International makes no warranties or claims as to the reliable operation of the PL-43DHD or PL-50DHD at altitudes greater than 5000 feet above sea level. If you are planning to use this product at a location above 5000 feet, please contact Runco technical support for further information.

Mounting the PlasmaWall on a Wall or Table Stand ➤

To install the PlasmaWall, you will need either an optional table stand or wall-mounting kit. The PlasmaWall cannot be installed on its own.

If you do decide to wall-mount the PlasmaWall, ensure that the wall-mount bracket is installed according to the instructions included with it. The wall must be capable of supporting a redundant weight factor three (3) times the weight of the display, or be reinforced.

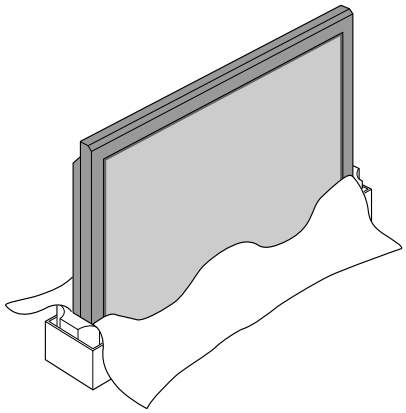
Runco recommends that this be done by a custom installation specialist.

Note

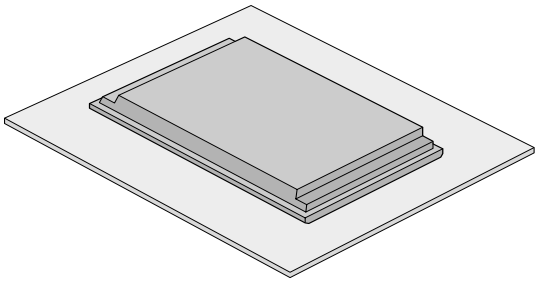
Use only a Runco-approved wall-mount kit or table stand that is specifically designed for your display.

You can attach your optional mounts or stand to the PlasmaWall in either of two ways:

- While it is upright.



- As it lies flat with the screen face down. Place the protective sheet, which was wrapped around the plasma monitor when it was packaged, between the screen and your work surface to avoid scratching or otherwise damaging the screen surface.



◄ ***Ambient Light***

In general, minimize or eliminate light sources directed at the display. Contrast ratio in your images will be noticeably reduced if light directly strikes the display, such as when a shaft of light from a window or floodlight falls on the image. Images may then appear washed out and less vibrant.

◄ ***Ventilation***

If you are mounting the PlasmaWall in an enclosure, leave at least 2 inches (50 mm) of space on all sides between it and surrounding objects, as shown in Figure 3-2. This allows heat to disperse, maintaining the proper operating temperature.

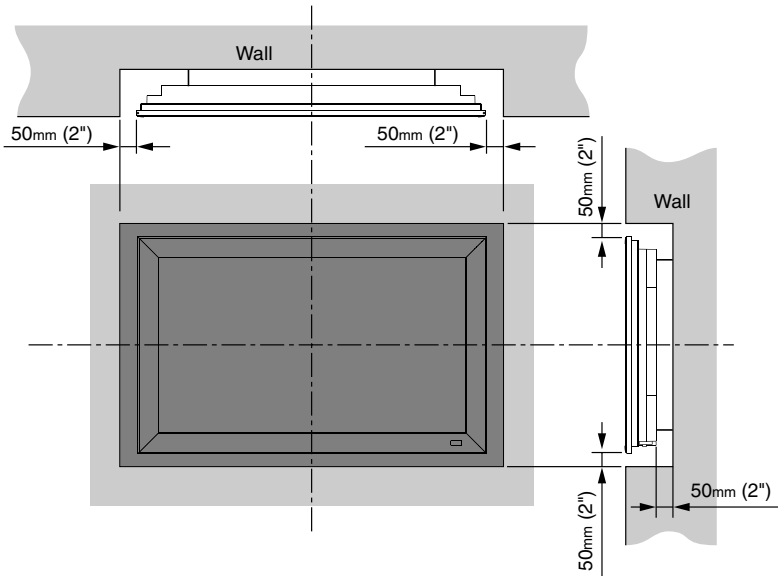


Figure 3-2. Ventilation Requirements for Enclosure Mounting

Other Considerations ➤

Other considerations and tips that can help improve your installation, avoid damage and prolong operating life:

- Keep the ambient temperature constant and below 35°C (95°F). Keep the display away from heating and/or air conditioning vents. Changes in temperature may cause drifts in the display circuitry, which may affect performance.
- Keep the PlasmaWall away from devices that radiate electromagnetic energy such as motors and transformers. Common sources of these include slide projectors, speakers, power amplifiers and elevators.
- Handle the unit carefully when installing or carrying it. Use the built-in handles; DO NOT touch or hold the screen face.
- Set the unit away from heat, excessive dust, and direct sunlight.
- Protect the inside of the unit from liquids and small metal objects. In case of accident, unplug the power cord and have it serviced by an authorized Service Center.
- Do not hit or scratch the panel surface as this causes flaws on the surface of the screen.
- For correct installation and mounting it is strongly recommended to use a trained, authorized dealer.
- To avoid sulfurization, it is strongly recommended not to place the unit in a dressing room in a public bath or hot spring bath.

3.4 Connections to the PlasmaWall and DHD Controller

Proceed as follows to connect the PlasmaWall to the DHD Controller, your video sources, external controller(s) – if present – and AC power.

When connecting your equipment:

- Turn off all equipment before making any connections.
- Use the correct signal cables for each source.
- Ensure that the cables are securely connected. Tighten the thumbscrews on connectors that have them.
- Use the left audio input when connecting mono audio sources.

Connect the DHD Controller to the PlasmaWall as shown in Figure 3-3 and described in the sections that follow.

➤ ***Connecting the PlasmaWall to the DHD Controller***

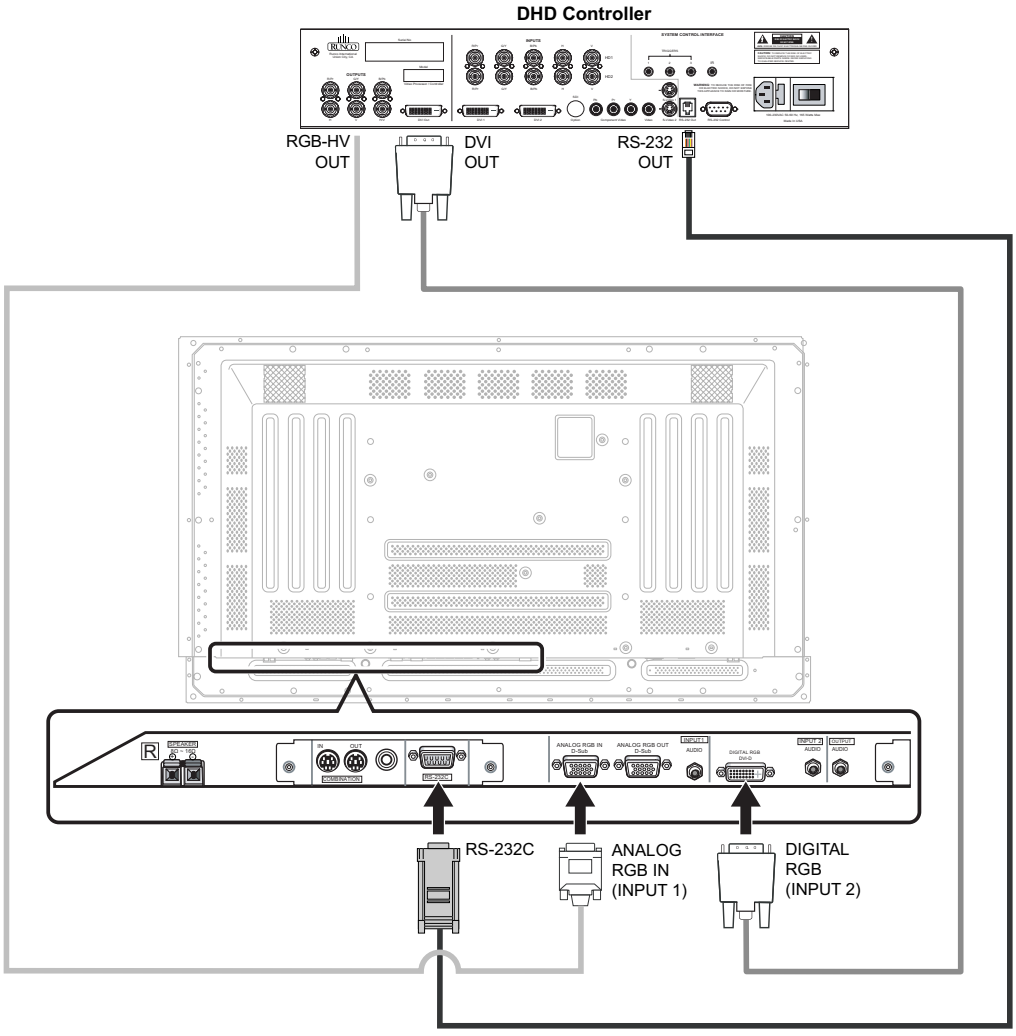


Figure 3-3. Connecting the PlasmaWall to the DHD Controller

Digital Video Connection: The PlasmaWall has a DVI input, labeled **DIGITAL RGB**. Connect the DVI output from the DHD Controller to this input, using a standard DVI cable.

RGBHV Connection: Connect the RGBHV output from the DHD Controller to the **ANALOG RGB IN** input on the PlasmaWall. Use a standard RGBHV breakout cable with 5 BNC connectors at each end.

RS-232 Connection: Connect the RS-232 output from the DHD Controller to the **RS-232C** input on the PlasmaWall. Use a standard, modular telephone cable with RJ11 plugs at both ends. On the PlasmaWall end, use the provided RJ11-to-DB9 adapter. This adapter is wired as shown in Figure 3-4.

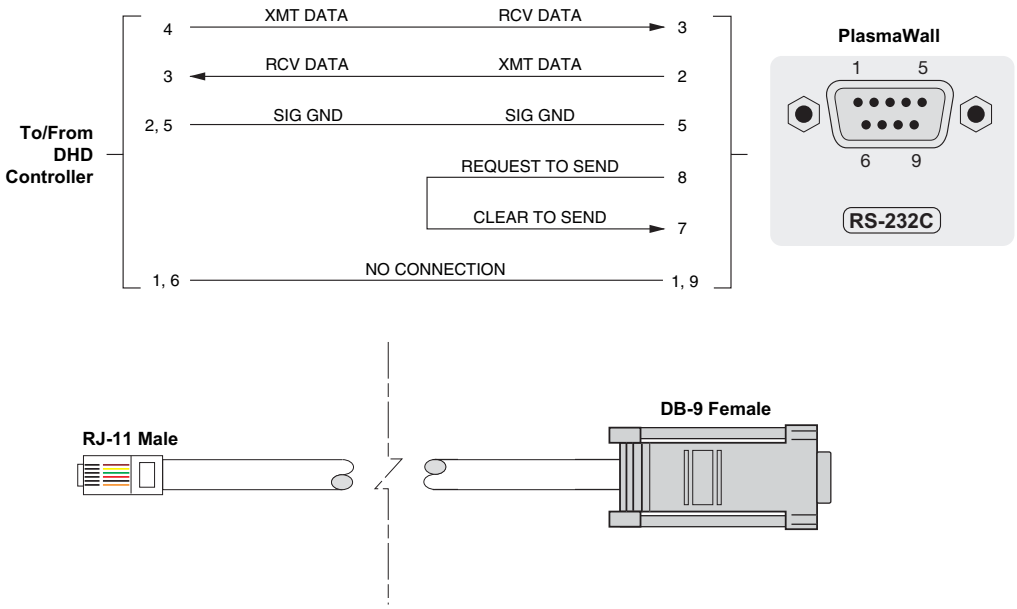


Figure 3-4. RS-232 Connection from the DHD Controller to the PlasmaWall

➤ *Connecting Source Components to the DHD Controller*

Connect your video sources to the DHD Controller as shown and described in the sections that follow.

DVI Connections: See Figure 3-5.

Tip

Use the DVI inputs whenever possible. This ensures the highest video quality because the signal is carried in the digital domain throughout the entire signal path, from source component output into the display.

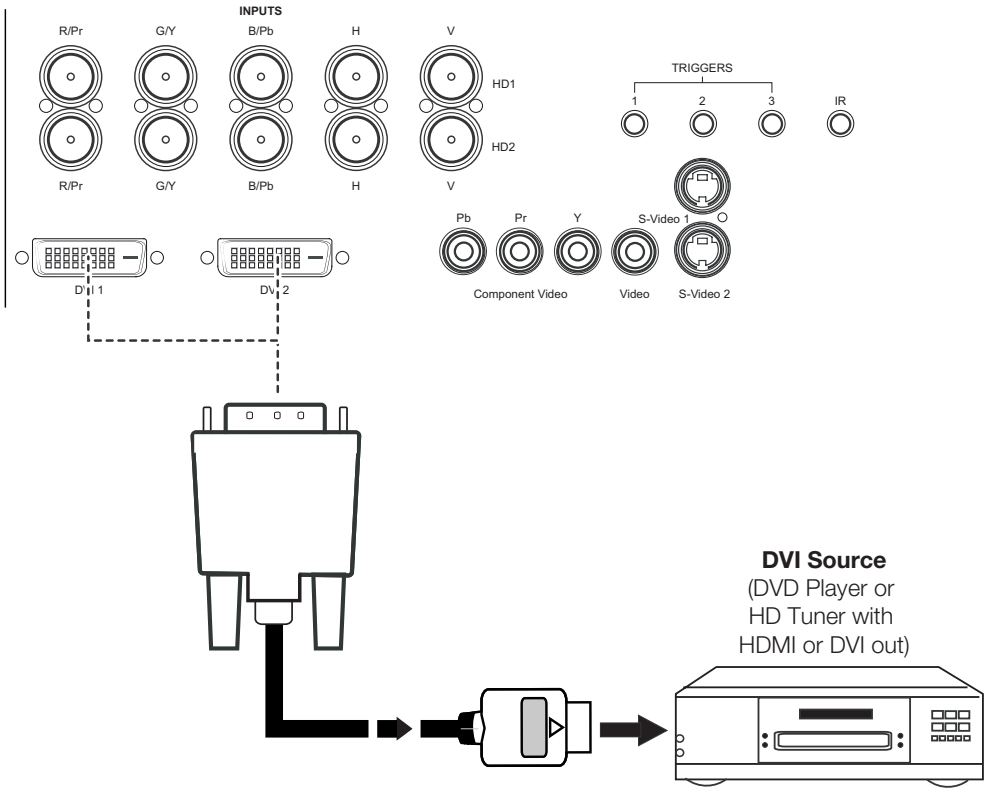


Figure 3-5. DVI Source Connections

Digital (DTV) RGB Connections: See Figure 3-6.

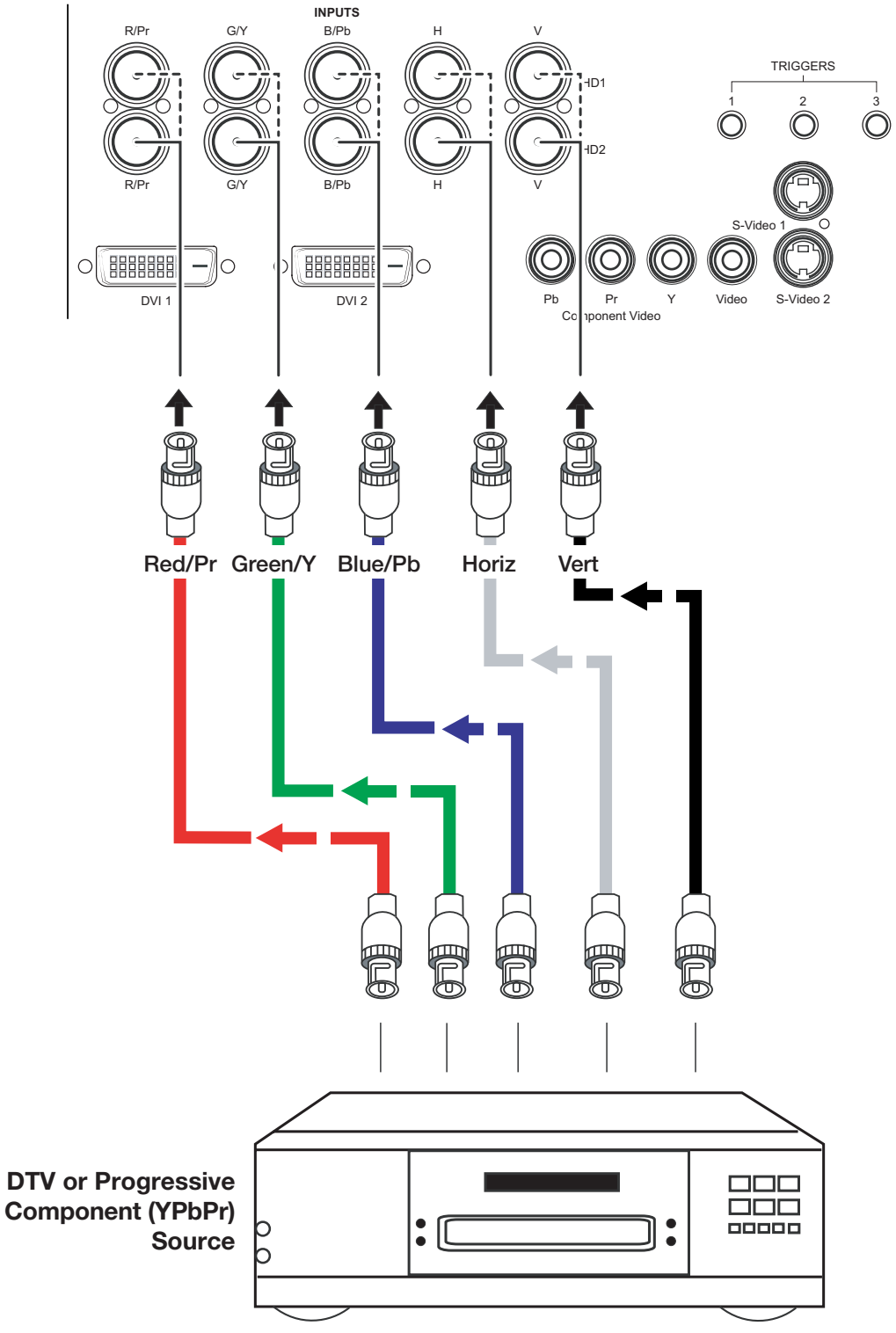


Figure 3-6. Digital (DTV) RGB Connections

Analog (Computer) RGB Connections: See Figure 3-7.

Note

1. *Refer to* ***Computer/Video Signal Compatibility*** *on page 58 for a list of computer signals compatible with the PlasmaWall. Use with signals other than those listed may cause some functions not to work.*

2. *Some Macintosh computers may require a Macintosh video adapter. Contact your nearest authorized service center or dealer.*

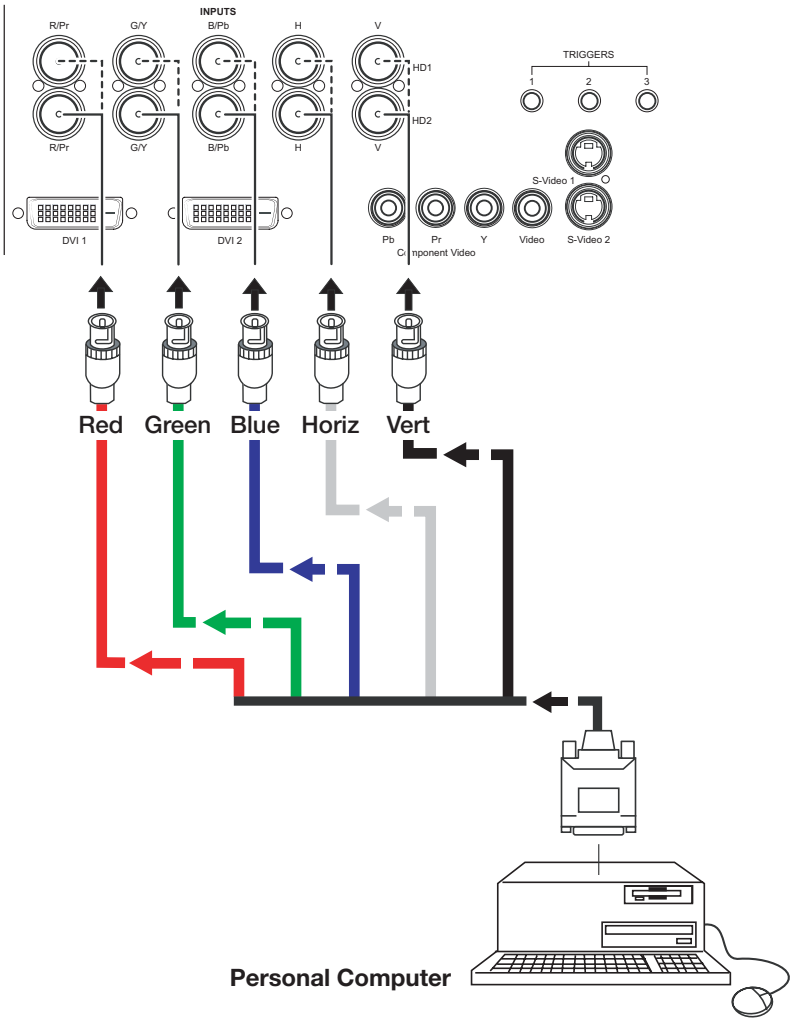


Figure 3-7. Analog RGB Connections

Composite/S-Video/Component Video Connections: See Figure 3-8.

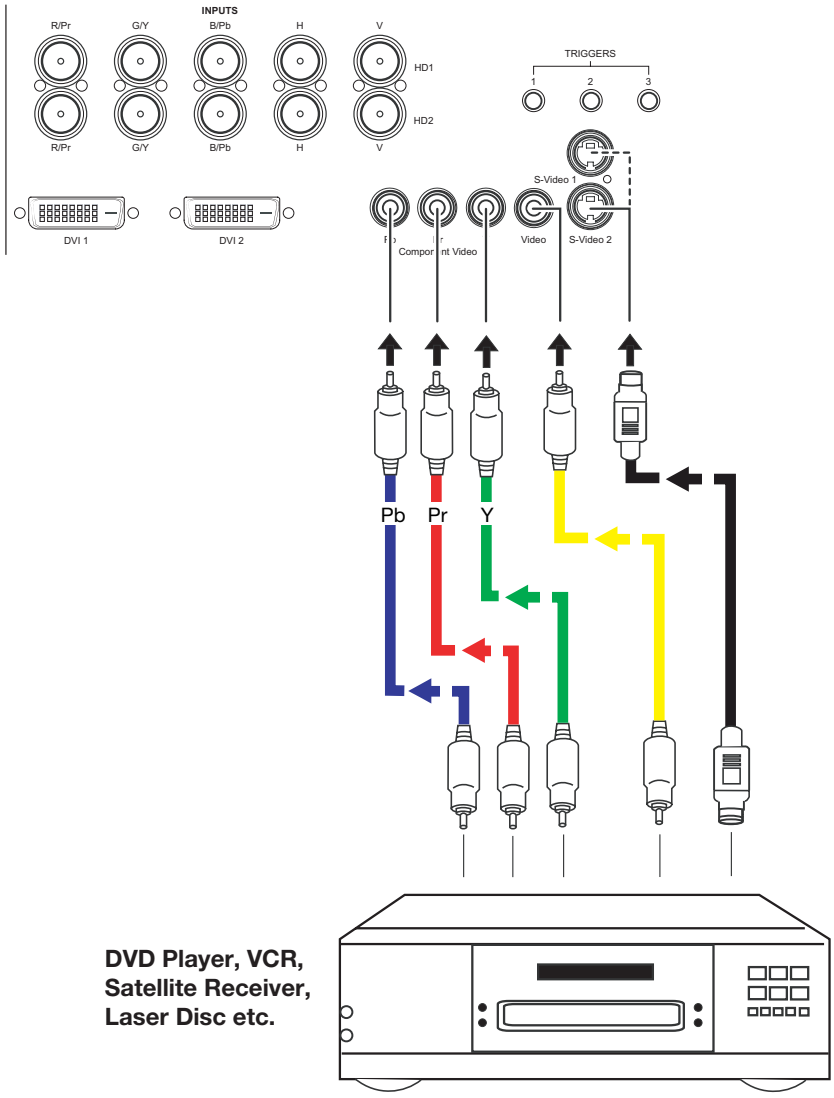


Figure 3-8. Composite, S-Video and Component Video Connections

◄ *RS-232 Controller Connection*

Use a standard, 9-pin RS-232 cable to connect a PC or home theater control/automation system (if present) to the RS-232 Control port on the DHD Controller; see Figure 3-9.

For more information about using this connection, refer to ***Serial Communications*** on page 49.

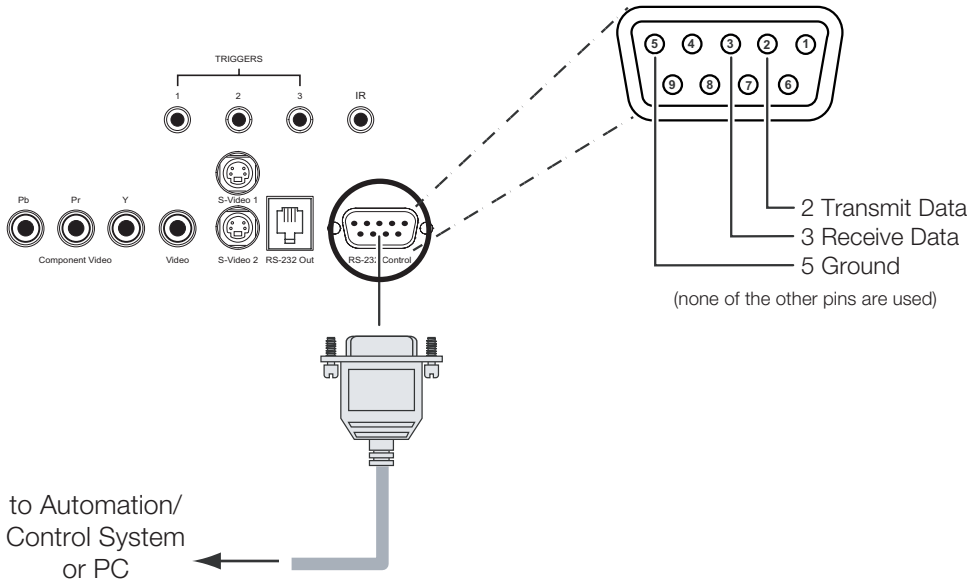


Figure 3-9. RS-232 Control System Connection

◄ *Connecting 12-Volt Trigger Outputs to External Theater Components*

If your home theater contains equipment that responds to 12-volt triggers, connect them to the 12-volt trigger outputs as shown in Figure 3-10.

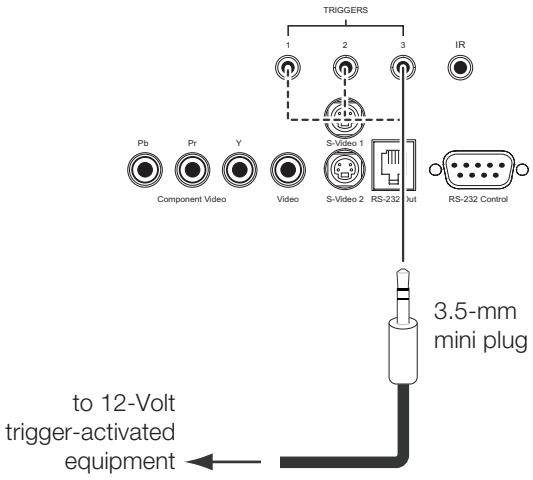


Figure 3-10. Connecting 12-Volt Trigger Outputs

Cable Management ➤ To minimize cable clutter, you can use the cable ties provided with the PlasmaWall to bundle the video, control and power cables at the back of the display. Install the cable ties as shown in Figure 3-11. Cables can be routed to the right or left.

Note *Do not allow excessive stress to be placed on the ends of cables.*

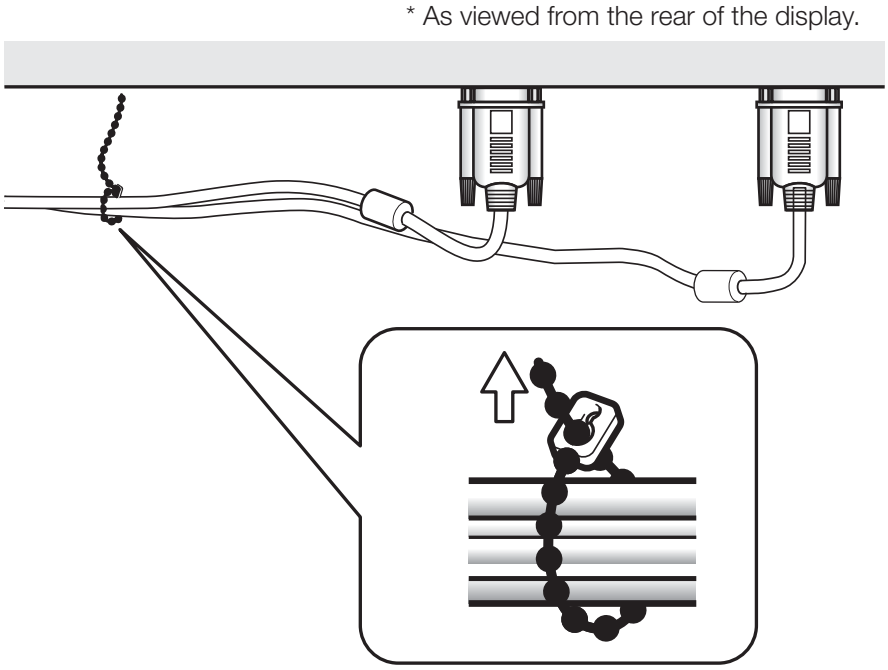
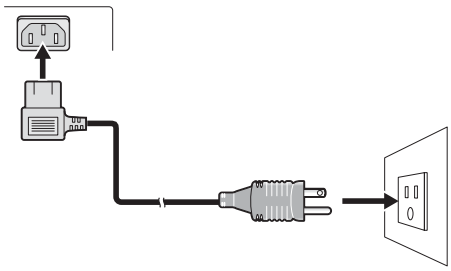


Figure 3-11. Installing the Cable Ties

4. Operation

4.1 Turning on the Power

1. Turn on your source components.
2. Plug the female end of the power cord into the AC receptacle on the rear of the PlasmaWall. Connect the other end to your AC power source.

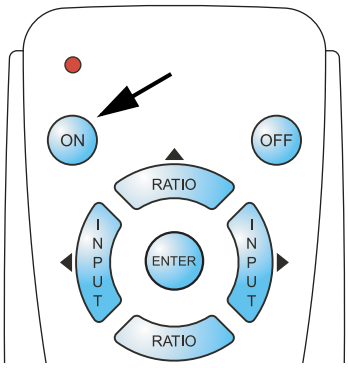


WARNING

The PlasmaWall input voltage is pre-set at the factory for either 100 – 120 VAC at 50/60 Hz or 200 – 240 VAC at 50 Hz.

Do not use a power supply voltage other than that for which the PlasmaWall is pre-set, as this may cause fire or electric shock.

3. Similarly connect the DHD Controller to a nearby AC outlet.
4. Set the main power switch at the rear of the PlasmaWall (see Figure 2-2) to the “on” position. Its power indicator lights red.
5. Set the main power switch at the rear of the DHD Controller (see Figure 2-4) to the “on” position.
6. Press the **ON** button on the remote control to turn on the DHD Controller and PlasmaWall (or press the power button on the front of the DHD Controller). The power indicator on the DHD Controller lights solid blue.
7. After a brief warm-up period (approximately 10 seconds), the PlasmaWall will display an image.



4.2 Selecting the Input Source

By default, the PlasmaWall is configured to display the signal received on its RGBHV (**ANALOG RGB IN**) input. To use the DVI-D (**DIGITAL RGB**) input instead:

1. Press **MENU** and enter the Service Menu passcode.

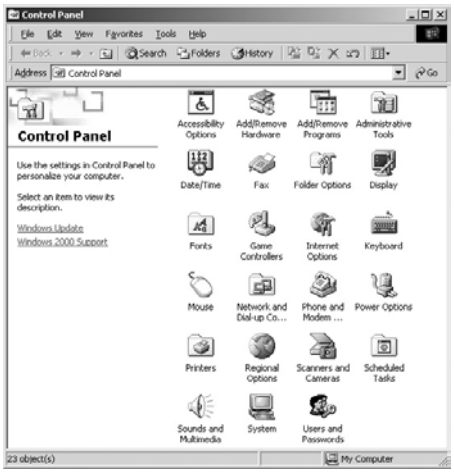
Note *You must enter a passcode to access the Service menu.*

2. Select **Service** from the Main Menu.
3. Select **Display Device** from the Service Menu.
4. Press ▼ to select DVI/HDMI, then press **ENTER**.

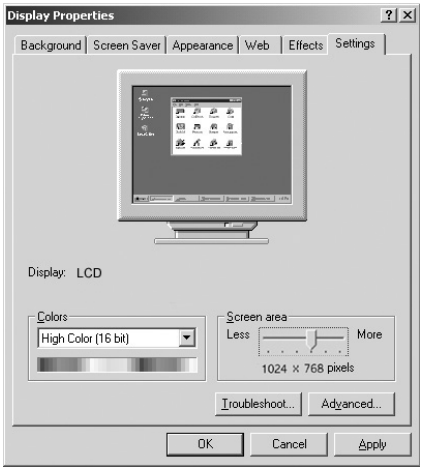
4.3 Setting the PC Display Properties

To maximize image quality when using the PlasmaWall with a personal computer, you may need to adjust the display properties of your PC video card. To do this:

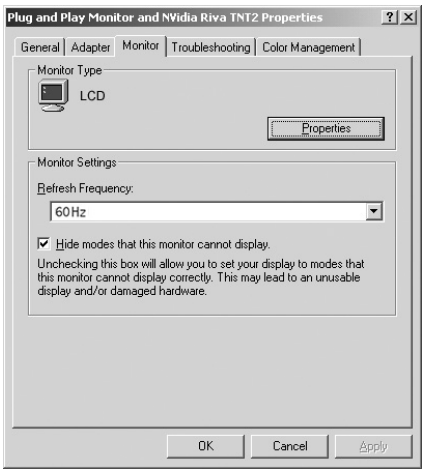
1. Choose Settings from the Windows Start menu and click on “Control Panel.”



2. Double click on the **Display** icon.
3. Click the **Settings** tab on the display dialog box.
4. Adjust the resolution to 1024x768 or 1280x768 pixels.



5. Click the **Advanced** button and click the **Monitor** tab on the dialog box. Set the vertical frequency to 60Hz and click **OK**.



Note

1. *The native resolution of the PL-43DHD is 1024 x 768; the native resolution of the PL-50DHD is 1280 x 768. Other horizontal or vertical resolutions may be scaled upward or downward to fit the display.*
2. *With most computers, you can get the best picture at 1024 x 768 @ 60Hz or 1280 x 768 @ 60Hz.*
3. *For best results when using a computer, set the input on the DHD Controller to HD Pass Thru 1 or HD Pass Thru 2, depending on which RGB/HD input you are using.*

WARNING

*To prevent image retention (burn) on your display, **ALWAYS** use a screen saver and set it to the shortest possible time.*

4.4 Using the On-Screen Menus

Press the **MENU** button on either the remote control or the DHD Controller front panel to display the Main Menu. To select a menu item, use the UP (▲) and DOWN (▼) buttons on either the remote control or the DHD Controller front panel to highlight it. Press **ENTER** to confirm your selection.

The PlasmaWall OSD menus are arranged hierarchically, as shown in Figure 4-1. Depending on the selected input source and signal characteristics, some menu options may not be available.

Input Source	Composite
	S-Video 1
	S-Video 2
	Component SD
	HD/RGB 1
	HD/RGB 2
	DVI 1
	DVI 2
	HD Pass Thru 1/ HD Pass Thru 2 (available only when Display Device Input Source = RGB)
Aspect Ratio	Anamorphic
	Standard 4:3
	Letterbox
	VirtualWide
	Cinema
Picture	Brightness
	Contrast
	Color
	Tint
	Sharpness
Input Position	Left/Right
	Up/Down
	Width
	Height
	Overscan
ISF Presets	Recall ISF Night
	Recall ISF Day
	Recall/Save Custom 1
	Recall/Save Custom 2
	Reset Custom 1 & 2 to Factory Default
Information (read-only)	Serial Number
	Hardware
	Firmware
	Date

Service	Test Video	Grey Bars 1	
		Grey Bars 2	
		Color Bars 1	
		Color Bars 2	
	Input Names	Rename, Restore or Save	
	Remote Control	Primary	
		Secondary	
	Analog Out Mode	RGB--, RGB++ or RGBS	
	Display Device	Input Source	RGB or DVI/HDMI
		Configure	Mirror Mode (flip horizontally, vertically or both)
			Left/Right
			Up/Down
			Width
			Height
	HD Format	HD/RGB 1	Auto, RGB or YUV
		HD/RGB 2	
		ADC Bandwidth	Auto, 75 MHz, 150 MHz or 300 MHz
		YPbPr Input Resolution	Auto, 480i/p, 576i/p, 720p or 1080i
	Triggers	1 / 2 / 3 / Save	
	Miscellaneous	Language	(currently, English only)
		Menu Mode	
		Timeout	
		Side Bar Color	
		Film Mode (SD src. only)	
	Resolution	800x600 ... 1400x1050 480p ... 720p ... 1080i	
	System Reset		
	Restore Saved Settings		

Calibration	ISF Night - Display Color	Gain
		Offset
		Color Temp. (available only when Display Device Input Source = RGB)
	ISF Night - Input Image	Brightness
		Contrast
		Color
		Tint
		Sharpness
	ISF Night - Input Color	Gain
		Offset
		Chroma Delay
		Phase
		Noise Filter
	ISF Day - Display Color	Gain
		Offset
		Color Temp. (available only when Display Device Input Source = RGB)
	ISF Day - Input Image	Brightness
		Contrast
		Color
		Tint
		Sharpness
	ISF Day - Input Color	Gain
		Offset
		Chroma Delay
		Phase
		Noise Filter
	Save ISF Settings	Back / Confirm
	Output Shift	Left/Right
		Up/Down
		Width
		Height
		Save
	Splash Configure	Owner Name
		ISF Calibrated
		ISF Other
		Splash Enable
	OSD Position	

Figure 4-1. DHD Controller OSD Menu Structure for PlasmaWall

Main Menu ➤

The Main Menu is the starting point for accessing all display functions.

(The Calibration and Service menus are hidden and not accessible until you enter a passcode.)

Runco Video
Input Source
Aspect Ratio
Picture
Input Position
ISF Presets
Information
Calibration
Service

Input Source ➤

From the Main Menu, select Input Source to choose a video signal source.

The active source is indicated by an arrow (>) to its left; in the example at left, Composite is the active source.

Input Source	
>	**Composite**
	S-Video 1
	S-Video 2
	Component SD
	HD/RGB 1
	HD/RGB 2
	DVI 1
	DVI 2
	HD Pass Thru 1
	HD Pass Thru 2

Note

1. *HD Pass Thru 1 and HD Pass Thru 2 are available only when the Display Device Input Source is set to **RGB**; refer to **Display Device** on page 44.*
2. *Selecting HD Pass Thru 1 or HD Pass Thru 2 loops the HD/RGB 1 or HD/RGB 2 input signal respectively to the RGB output. This prevents display of the on-screen menus. To switch from HD Pass Thru 1 or 2 to another source, use the direct access buttons on the remote control, or the left- or right-arrow buttons on the DHD Controller.*
3. *If the DVI 1 or DVI 2 input is active and the input signal is HDCP-encrypted, the RGBHV output of the DHD Controller is disabled.*

Aspect Ratio ➤

To change the aspect ratio (size and shape) of the projected image, select Aspect Ratio from the Main Menu and press **ENTER**. Select the appropriate aspect ratio for your screen size and the type of program material being viewed; refer to Table 4-1.

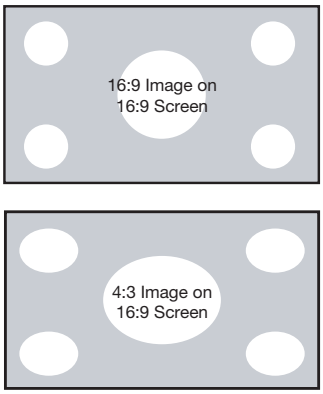
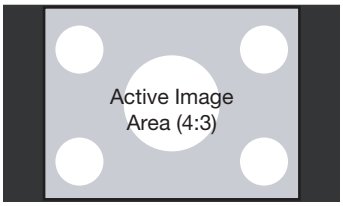
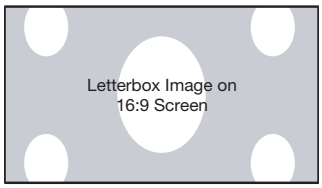
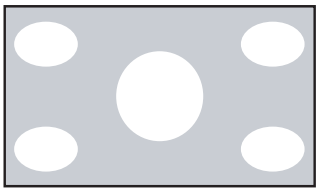
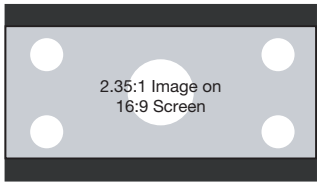
The currently-selected aspect ratio is indicated by a "☒" to its left; in the example at left, Anamorphic is selected.

Aspect Ratio	
☒	**Anamorphic**
☐	**Standard 4:3**
☐	**Letterbox**
☐	**VirtualWide**
☐	**Cinema**

Note

The aspect ratio selection is automatically saved for each input and resolution.

Table 4-1. Aspect Ratio Settings

Aspect Ratio	Remote Control Key	Description	
Anamorphic	ANA		Select Anamorphic to view 16:9 DVDs and HDTV programs in their native aspect ratio. 4:3 images are stretched horizontally to fit a 16:9 screen.
Standard 4:3	4X3		Standard 4:3 scales the input signal to fit in the center of the 16:9 screen. 4:3 is the aspect ratio used by computer monitors, standard television programming and most VHS video cassettes.
Letterbox	LET BOX		In Letterbox mode, the image is stretched vertically; the top and bottom portions are “blanked off.” Letterbox is best suited for viewing LaserDisc movies or non-anamorphic DVDs on a 4:3 screen.
VirtualWide	V-WIDE		A 4:3 image is scaled NON-linearly (more on the sides than in the center) to fit a 16x9 screen.
Cinema	CINEMA		Select Cinema to view 2.35 source material on a 16:9 screen. The upper and lower portions of the screen are masked, but the geometry of the active image area is not changed.

Picture ➤

Picture
Brightness
Contrast
Color
Tint
Sharpness

Use the controls in the Picture Menu to calibrate your PlasmaWall for optimum picture quality.

The PlasmaWall has been designed to incorporate setup and calibration standards established by the Imaging Science Foundation (ISF). The ISF has developed carefully crafted, industry-recognized standards for optimal video performance and has implemented a training program for technicians and installers to use these standards to obtain optimal picture quality from Runco video display devices. Accordingly, Runco recommends that setup and calibration be performed by an ISF certified installation technician.

All signal types require separate processing. Therefore, you need to calibrate each DHD Controller input separately. Runco recommends calibrating the inputs in this order:

1. Component SD
2. S-Video 1 / S-Video 2
3. Composite
4. HD/RGB 1 / HD/RGB 2
5. DVI 1 / DVI 2

Note

When you change a picture quality setting, save the change to a preset afterwards. Otherwise, the change will be lost when a different input is selected. (Picture quality settings are saved for each input separately.) For information about saving settings, refer to ***ISF Presets*** *on page 40.*

Although it may be possible to obtain satisfactory picture quality using the naked eye and regular program material, Runco recommends using the following calibration tools for best results:

- External test pattern source – Ovation Multimedia, Video Essentials or AVIA test DVD (or equivalent).
- A blue filter (provided with many test DVDs), for color level and tint adjustments.

Connect your test pattern source to the input that you are calibrating and proceed as follows. **Perform the adjustments in the order listed here.**

Brightness: On your external test pattern source, select a PLUGE pattern. (PLUGE is an acronym for “Picture Line-Up Generation Equipment.”) Figure 4-2 shows a typical PLUGE pattern.

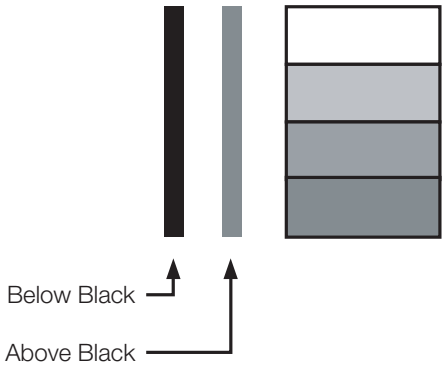


Figure 4-2. Typical PLUGE Pattern for Adjusting Brightness

PLUGE patterns vary but generally consist of some combination of black, white and gray areas against a black background. The example above includes two vertical bars and four shaded boxes.

Select Brightness from the Picture menu and press **ENTER**. Adjust the brightness so that:

- The darkest black bars disappear into the background.
- The dark gray areas are barely visible.
- The lighter gray areas are clearly visible.
- The white areas are a comfortable level of true white.
- The image contains only black, gray and white (no color).

Contrast: On your external test pattern source, select a stepped, gray-bar pattern like the one shown in Figure 4-3.

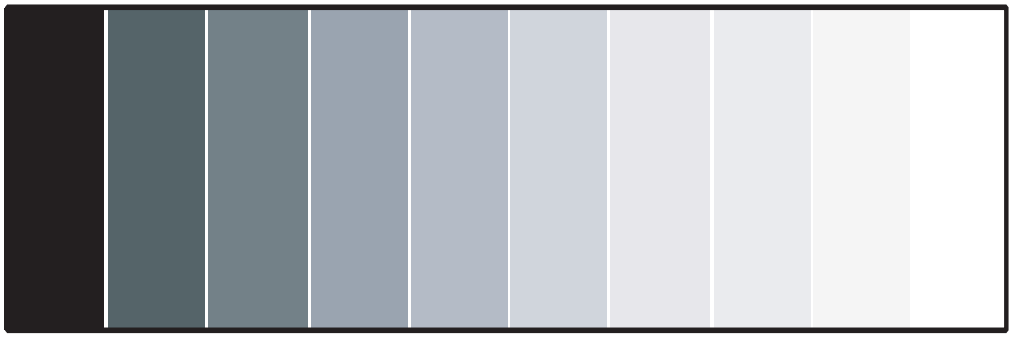


Figure 4-3. Typical Gray Bar Pattern for Adjusting Contrast

Select Contrast and press **ENTER**. Adjust the contrast to a point just below which the white rectangle starts to increase in size.

Note

Brightness and contrast controls are interactive. A change to one may require a subtle change to the other in order to achieve the optimum setting.

Color Saturation: On your external test pattern source, select a color bar pattern like the one shown in Figure 4-4.

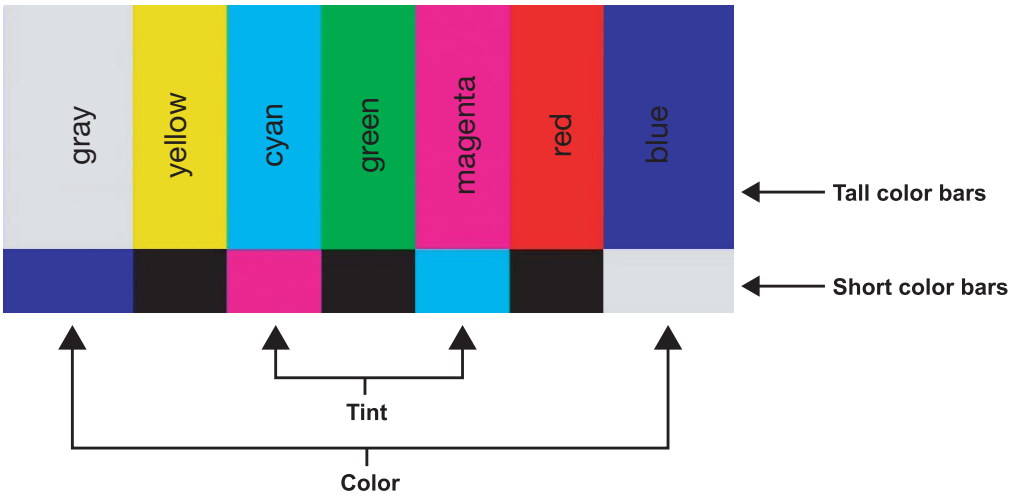
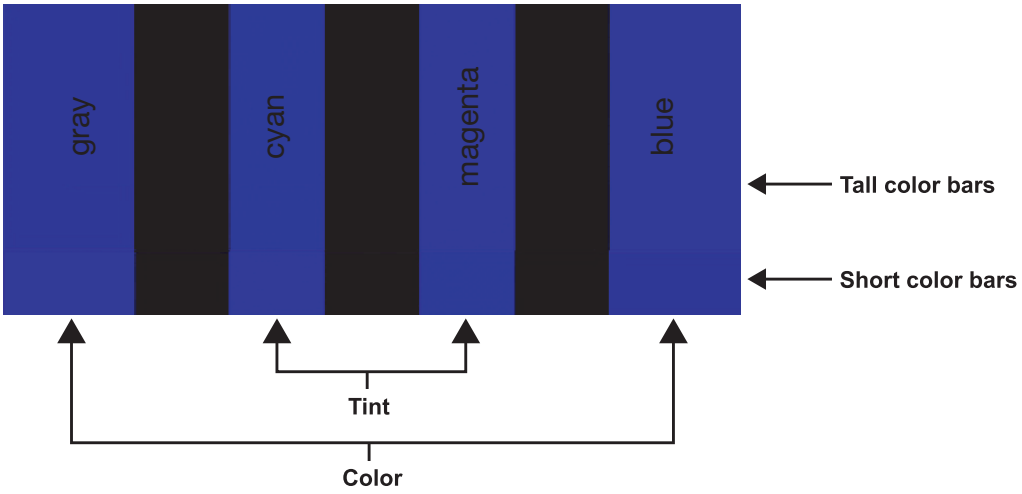


Figure 4-4. Typical Color Bar Pattern for Adjusting Color Saturation and Tint

Select Color and press **ENTER**. While looking at the color bar pattern through a blue filter, adjust the color saturation level until the outermost (gray and blue) color bars appear to be a single shade of blue:



Tint: Tint or "hue" is essentially the ratio of red to green in the color portion of the image. When tint is decreased, the image appears redder; when it is increased the image appears greener. To set the tint, select Tint and press **ENTER**. While looking at the color bar pattern through a blue filter, adjust the tint level until the cyan and magenta color bars (on either side of the green bar) appear to be a single shade of blue.

Note

Like the brightness and contrast controls, the color and tint controls are interactive. A change to one may require a subtle change to the other in order to achieve the optimum setting.

Sharpness: “Sharpness” is the amount of high-frequency detail in the image. To adjust sharpness, select Sharpness from the Picture menu and press **ENTER**. On your external test pattern source, select a pattern like the one shown in Figure 4-5. Adjust as needed, looking for white edges around the transitions from black to gray and differently-sized lines in the “sweep” patterns at the top and bottom. Lower the sharpness setting to eliminate them.

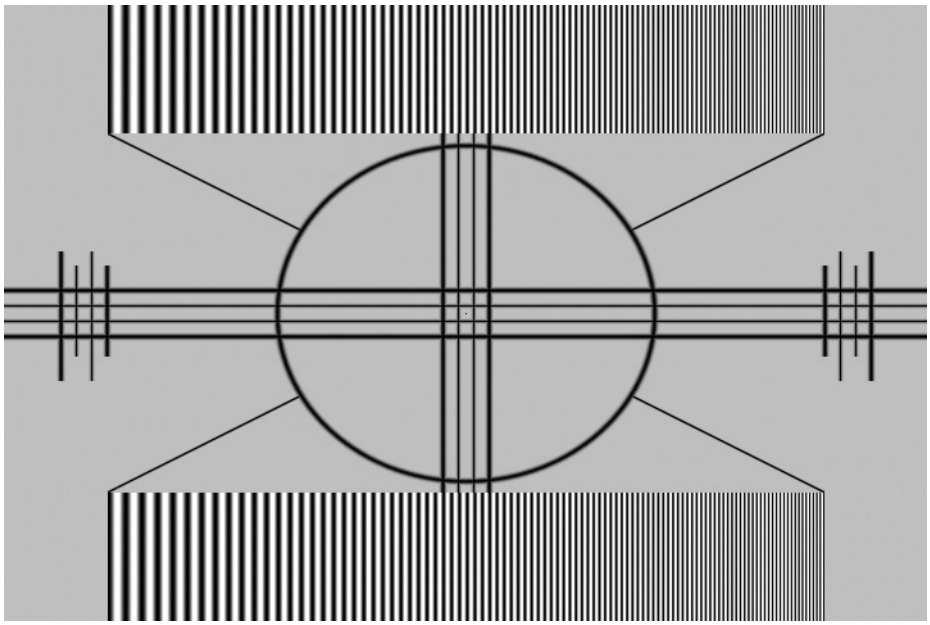


Figure 4-5. Typical Test Pattern for Adjusting Sharpness

Use the controls in the Input Position Menu to fine-tune the aspect ratio and image position for the current source.

◄ ***Input Position***

Input Position
Left/Right
Up/Down
Width
Height
Overscan

Note *The input position settings are automatically saved for each input and resolution.*

Left/Right: Select Left/Right from the Input Position menu to shift the projected image horizontally. Use the right or up cursor button to shift the image to the right; use the left or down button to shift it to the left.

Up/Down: Select Up/Down from the Input Position menu to shift the projected image vertically. Use the right or up cursor button to shift the image upward; use the left or down button to shift it downward.

Width: Select Width from the Input Position menu to change the projected image width. Use the right or up cursor button to increase the width; use the left or down button to decrease it.

Height: Select Height from the Input Position menu to change the projected image height. Use the right or up cursor button to increase the height; use the left or down button to decrease it.

Overscan: Image Overscan pushes the outside edge of the active picture area of the video signal out beyond the edge of the display area.

Some television programs are produced based on the assumption that older television sets may not display the outer edges of the broadcast picture area. Over scan effectively trims away these inactive, outer edges and enlarges the remaining portion of the image to fill the display area.

Select from 1% to 10% of Overscan, as desired.

For HDTV, DVDs and other video sources, Overscan is generally not necessary or desirable.

ISF Presets ➤

For each input, the PlasmaWall lets you save image quality settings as presets that you can recall at a later time. You can create up to four presets per input and resolution. Use the ISF Presets menu to recall saved image presets, or to save image settings in the "Custom 1" or "Custom 2" memory location. The currently-selected preset is indicated by a "☒" to its left; in the example shown here, ISF Night is selected.

ISF Presets	
☒ ISF Night	
☐ ISF Day	
☐ Custom 1	Save
☐ Custom 2	Save
Factory Default	

You should save changes to any of the following settings to a preset; otherwise they will be lost when a new input source or resolution is selected:

- Brightness
- Contrast
- Color saturation
- Tint
- Sharpness

To reset the Custom 1 and Custom 2 image presets to their factory defaults, select Factory Default and press **ENTER**.

Information ➤

Select Information from the Main Menu to see information that uniquely identifies your display: its serial number, the installed hardware and firmware versions and the firmware version build date. Should you ever need to contact Runco Technical Support, this information will help them answer your questions or resolve product performance issues.

Information	
Serial Number	
Hardware	0
Firmware	0002.001B
Date	Mar 24 2006

Use the Calibration menu to perform advanced picture quality adjustments. **This menu should be used by ISF-certified technicians only.**

Note

You must enter a passcode to access the Calibration menu.

To recall the ISF Night or ISF Day settings, select “ISF Night” or “ISF Day” from the ISF Presets menu (see above). Or, use the corresponding buttons on the remote control.

ISF Night - Display Color: Use the Display Color settings to adjust the color balance at the display device (as opposed to the DHD Controller). These settings are saved independently for each input.

- **Gain:** Use the Gain controls to correct color imbalances in the bright areas of the image. A good way to do this is to use a test pattern consisting mostly of solid white areas, such as an 80 IRE “window” pattern. If the white areas contain traces of red, green or blue, decrease the Gain for that color.
- **Offset:** Use the Offset controls in the White Balance sub-menu to correct color imbalances in the dark areas of the image. A good way to do this is to use a test pattern consisting mostly of dark gray areas, such as a 30 IRE “window” pattern. If the gray areas contain traces of red, green or blue, decrease the Offset for that color.
- **Color Temp (RGB Display Device only):** Select Color Temp from the Display Color menu to adjust the color temperature. The default setting is appropriate for most situations. Higher settings produce a “bluer” picture.

ISF Night - Input Image: The Input Image controls are similar to those in the Picture menu, but are accessible only by entering the Calibration menu passcode. This makes it possible to restore the picture quality settings to what they were when the display was installed, simply by recalling the “ISF Night” preset.

ISF Night - Input Color: The Input Color controls are similar to those in the Display Color menu (see above), but adjust the color balance at the DHD Controller (as opposed to the display device). These settings are also saved independently for each input.

- **Gain/Offset:** Refer to ***ISF Night - Display Color***, above.
- **Chroma Delay:** use the Chroma Delay control to correct a mis-aligned image from a Composite, S-Video or Component video source. Chroma delay in an image causes color shifts to occur to the left of the vertical edge transitions, producing artificial shadows or a “halo” effect. If necessary, adjust this setting to eliminate them.
- **Phase:** Adjust the phase if the image (usually from an RGB source) shows shimmer or “noise.” Pixel phase adjusts the phase of the pixel sampling clock relative to the incoming signal. The effect of this control is similar to that of a tracking control on a VCR.

  For best results, use a good test pattern such as a smooth gray consisting of a clear pattern of black and white pixels, or a similar “half on, half off” graphic image. (You may notice that you can stabilize the image at more than one point. Use either setting in this case.)

◄ ***Calibration***

Calibration
ISF Night
Display Color
Input Image
Input Color
ISF Day
Display Color
Input Image
Input Color
Save ISF Settings
Output Shift
Splash Configure
OSD Position

- **Noise Filter:** To apply noise filtering to the input signal, select Noise Filter from the Input Color menu. The Noise Filter is useful for clearing up noisy images from 480i video sources.

  Use the left- or right-arrow buttons to select the desired amount of noise reduction, keeping in mind that higher settings (which reduce high frequencies) may also "soften" the image.

ISF Day - Display Color: Refer to ***ISF Night - Display Color***.

ISF Day - Input Image: Refer to ***ISF Night - Input Image***.

ISF Day - Input Color: Refer to ***ISF Night - Input Color***.

Save ISF Settings: Whenever you make a change to the ISF settings, you should always save it. Select Save ISF Settings from the ISF Calibration menu to do this. In the event you ever have to perform a System Reset, you can restore the saved ISF settings by selecting Restore Saved Settings in the Service menu. (System Reset and Restore Saved Settings are described on page 46.)

Output Shift: The controls in the Output Shift menu are similar to those in the Input Position menu, except that they change the characteristics of the output signal. These settings are saved independently **for each aspect ratio**.

Splash Configure: Use the Splash Configure menu to customize the appearance of the start-up message that appears on the vacuum fluorescent display upon power-up. You can have the PlasmaWall display the owner's name, your name, the phrase "ISF Calibrated" and/or any other string, up to 20 characters in length.

Use the up or down cursor button to select a character. Use the right and left cursor buttons to change the cursor position. Press **MENU** when you have finished entering text. Then, check the "Splash Enable" box to have the PlasmaWall display the information you enter here when it is turned on.

OSD Position: Select OSD Position, press **ENTER** and use the arrow buttons to change the size and position of the OSD controls.

Service ➤

Use the Service menu to access advanced display configuration settings. **This menu should be used by ISF-certified technicians only.**

Service
Test Video
Input Names
Remote Control
Analog Out Mode
Display Device
HD Format
Triggers
Miscellaneous
Resolution
System Reset
Restore Saved Settings

Note

You must enter a passcode to access the Service menu.

Test Video: Select Test Video from the Service Menu to access the internal test patterns on the PlasmaWall. Four patterns are available, consisting of white/gray or colored bars. These are useful for calibrating other theater source components (DVD player, HD tuner etc.) that have their own picture controls.

Press **MENU** to exit test pattern mode.

Input Names: You can give each DHD Controller input a descriptive name. For example, you may want to change the default input name to the type of source component connected to it: “VCR,” “DVD,” “Laptop” et cetera. Composite, S-Video and Component SD input names can be up to 12 characters long; the others can be up to eight characters long.

Input Names	
	Restore
Composite	Composite
S-Video 1	S-Video 1
S-Video 2	S-Video 2
Component SD	Component SD
HD/RGB 1	HD/RGB 1
HD/RGB 2	HD/RGB 2
DVI 1	DVI 1
DVI 2	DVI 2
Save	

To edit an input name, select Input Names from the Service menu. Press ▲ or ▼ to select an input and press **ENTER**. Use the ▲ or ▼ buttons to change a character; press ◀ or ▶ to select a character to change. When you have finished editing the input name, press **MENU**.

To restore the default input name, press ▼ repeatedly to highlight that input name in the “Restore” column. Then, press **ENTER**.

To save input names so that they can be restored after a System Reset (described on page 46), press ▼ repeatedly to highlight “Save.” Then, press **ENTER**.

Note

The ▼ button takes you from top to bottom in the left column, then from top to bottom in the right column. To highlight “Save,” scroll through both columns.

Remote Control: The Remote Control menu shows you the primary and secondary infrared (IR) codes to which the DHD Controller will respond. By default, both are set to 17. You can change these codes if either:

- Another device in the theater (a DVD player, for example) is responding to commands from the DHD Controller remote control (Figure 2-5) in ways that are unpredictable or undesirable.
- You have multiple DHD Controllers and want to control them independently, as opposed to broadcasting commands from a single remote to all of them. In this scenario, you can use multiple remotes programmed to use different IR codes. Or, you can use a single remote and change the IR code as needed to address a specific device.

Tip

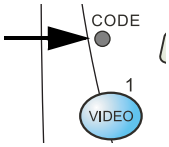
Use the DHD Controller front-panel keypad to change its IR code. Then, change the code sent by the remote to match as described below.

Note

Do not change the “Type” setting in this menu.

When you change a remote code on the DHD Controller, you must re-program your remote control to send that same code. To do this:

1. Using a straightened paper clip or similar object, press and hold the **CODE** button on the remote control for approximately three seconds, or until the red LED on the remote lights solid red.
2. Enter a new two-digit code between 00 and 31 inclusive. Include a leading zero for single-digit codes; for example, enter 9 as “09.”
3. The LED turns off to confirm the code change. If you enter an invalid code, the LED flashes for three or four seconds. Try again, entering a valid code.



Analog Out Mode: Select Analog Out Mode from the Service menu to change the characteristics of the analog output signal from the DHD Controller. The choices are RGB-- (separate sync with negative polarity), RGB++ (separate sync with positive polarity) or RGBS (composite sync).

Display Device: The options in the Display Device menu allow you to perform certain adjustments at the plasma display.

- **Input Source:** Select **Input Source** from the Display Device menu to switch from one DHD Controller output/PlasmaWall input to the other. Use the ▲ or ▼ button to select **RGB** or **DVI/HDMI**, then press **ENTER**.

  Note *If the DVI 1 or DVI 2 DHD Controller input is active and the input signal is HDCP-encrypted, the RGBHV output of the DHD Controller is disabled.*

  Tip *Use the serial command* `DISPLAY 1` *or* `DISPLAY 2` *to set the Input Source to RGB or DVI/HDMI respectively, so that the DHD Controller retains this setting after a System Reset. (This is not the case when you change the Input Source in the Display Device menu.) For more information, refer to* ***Miscellaneous Commands*** *on page 53.*

- **Configure:** Select Configure from the Display Device menu to perform the following display device adjustments (these are global, independent of any input):
  - Select **Mirror Mode** to change the displayed image orientation to suit the installation method; see Figure 4-6. For example, if the PlasmaWall is suspended from a ceiling, you may want to mount it upside down and run the cables upward (toward the ceiling) to make them less visible. In this case, you would use the “XY” mirror mode.

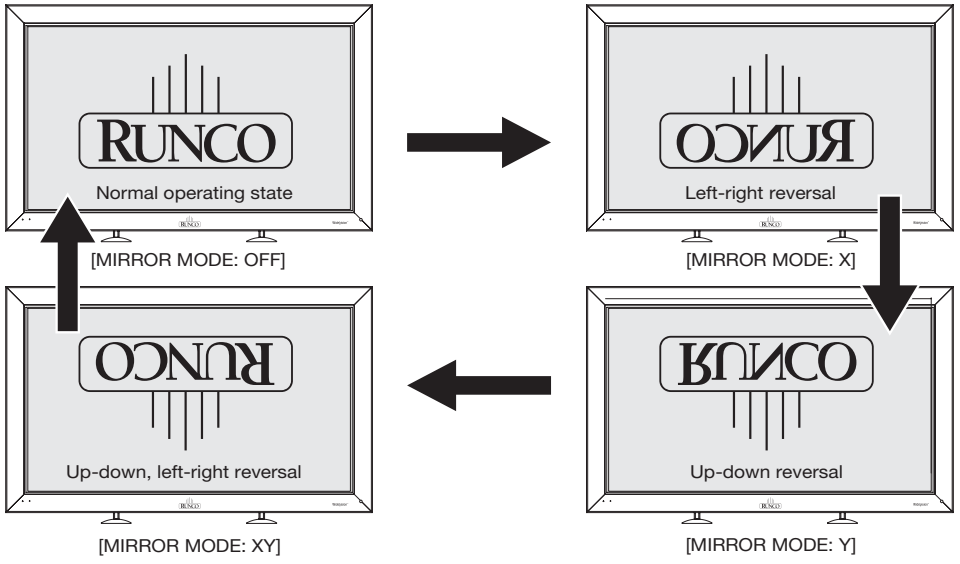


Figure 4-6. Mirror Mode

  - Select **Left/Right**, **Up/Down**, **Width** or **Height** to fine-tune the aspect ratio and image position.

HD Format: If the characteristics of the incoming signal on the HD1 or HD2 inputs are known, select HD Format from the Service menu and set them as described below. Doing so can reduce the time it takes the DHD Controller to switch from HD to 480i signals or vice versa.

This is generally not necessary unless the DHD Controller – for whatever reason – has difficulty determining the color space (RGB or YUV), bandwidth or resolution of the incoming HD signal. In most situations, the **Auto** settings work well.

- **HD/RGB 1 and HD/RGB 2 (Color Space):** Select Auto, RGB or YUV.
- **ADC Bandwidth:** Select Auto, 75 MHz, 150 MHz or 300 MHz.
- **YPbPr Input Resolution:** Select Auto or specify the input resolution, if known: 480i, 480p, 576i, 576p, 720p or 1080i.

Triggers: Select Triggers from the Service menu to configure the 12-volt trigger outputs. You can assign one or more trigger outputs to each aspect ratio. Those triggers are then activated by selecting that aspect ratio.

To save the trigger settings so that they can be restored after a System Reset (described below), press ▼ repeatedly to highlight "Save." Then, press **ENTER**.

Miscellaneous: Select Miscellaneous from the Service menu to set the following options:

- **Language:** Select Language from the Miscellaneous menu and press the up- or down-arrows to select the OSD language. (Currently, only English is supported.)
- **Menu Mode:** This is the manner in which the OSD menus appear and disappear when you press **MENU**. Choose one of the following:

  0 = No transition; menus abruptly appear and disappear.
  1 = Menus fade in and out.
  2 = "Checkerboard" dissolve; menus appear and disappear in sections.
  3 = "Window shade" effect; menus are drawn on a diagonal from top left to bottom right, and retract in the opposite direction.
- **Timeout - Short/Long:** These settings control how long the OSD menus stay on screen. Select a time-out period of from 2 to 60 seconds.
- **Side Bar Color:** This controls the color of the inactive image area. The range is from -100 (black) to 100 (white).

  The inactive image area is on either side of the active image area when using the Standard 4:3 aspect ratio (or the entire screen when no incoming video signal is present).
- **Film Mode:** Enable Film Mode to smooth out moving images from interlaced, standard-definition (SD) sources. In most cases, the PlasmaWall detects the proper "pull-down" rate and vertical frequency. However, if your source is jittery and/or tearing you may wish to enable Film Mode to ensure stable processing for that source.

Resolution: The DHD Controller defaults to an output resolution of 720p. When using the PlasmaWall with a computer or certain HD sources, you may want to force the DHD Controller to use a different output resolution. If so, select Resolution from the Service menu and choose one. Then, press **ENTER** to confirm.

System Reset: To reset ALL DHD Controller settings (including image settings) back to their factory defaults, choose System Reset from the Service menu.

A confirmation message appears, reminding you to save your settings before you perform the reset, so that you can restore them afterwards. If you have done this, select Confirm to continue with the reset. Otherwise, click Back to cancel.

Caution

This action is not undoable. Proceed with caution! *Before you perform a System Reset, save ALL settings, including "Custom" ISF Presets (page 40), ISF Day/Night presets (page 40), Output Shift settings (page 42), Input Names (page 43) and Trigger settings (page 45).*

Restore Saved Settings: Following a System Reset, select Restore Saved Settings to apply all previously-saved settings to the PlasmaWall and DHD Controller.

5. Maintenance and Troubleshooting

5.1 Troubleshooting Tips

Table 5-1 provides some general guidelines for troubleshooting problems you may encounter with the PlasmaWall. If you encounter an issue not described here, please contact your Runco dealer or Runco Technical Support.

Table 5-1. Troubleshooting Chart

Symptom	Possible Cause(s)	Solution
The display does not turn on after initial installation.	• The PlasmaWall is not plugged in or the AC outlet is not active. • The DHD Controller is not plugged in or the AC outlet is not active. • The remote control batteries have run out. • The serial connection from the DHD Controller to the PlasmaWall is incorrect.	• Ensure that the PlasmaWall is plugged in and that the AC outlet is active. • Ensure that the DHD Controller is plugged in and that the AC outlet is active. • Replace the batteries. • Ensure that the RS-232 output from the DHD Controller is properly connected to the RS-232C input on the PlasmaWall (see Figure 3-3).
The PlasmaWall and DHD Controller are both on, but there is no picture and on-screen menus do not appear.	• Faulty or incorrect video connection between the DHD Controller and the PlasmaWall. • Incorrect input source selection. • Display Device input source is set to RGB, DHD Controller input is set to DVI 1 or DVI 2 and DVI source is HDCP-encrypted.	• Ensure that the DVI and/or RGBHV outputs from the DHD Controller are properly connected to the video inputs on the PlasmaWall (see Figure 3-3). • Choose the correct input source on the display (refer to ***Selecting the Input Source*** on page 30). • Set the Display Device input source to DVI/HDMI or use a different input on the DHD Controller for the encrypted source material.
The display is on and menus appear, but there is no picture.	• Incorrect source selection. • Source component is not turned on. • Source component is connected incorrectly or not at all.	• Select the correct source. • Turn on the source component. • Check connections from source component to DHD Controller.

Table 5-1. Troubleshooting Chart (continued)

Symptom	Possible Cause(s)	Solution
Image is too bright and/or lacks definition in the bright areas of the image.	• Contrast is set too high.	• Lower the contrast setting.
Image appears “washed out” and/or dark areas appear too bright.	• Brightness is set too high.	• Lower the brightness setting.
Colors in the image are swapped; for example, reds appear blue or vice versa.	• The Red/Pr, Green/Y or Blue/Pb outputs from the source are connected to the wrong inputs on the DHD Controller. • The Red, Green or Blue (analog) outputs from the DHD Controller are connected to the wrong inputs on the PlasmaWall.	• Ensure that the source outputs are connected to the correct DHD Controller input. • Ensure that the DHD Controller outputs are connected to the correct inputs on the PlasmaWall.
RGB-HD images appear “noisy.”	• Clock and Phase settings need adjustment.	• Adjust Clock and Phase settings (refer to ***ISF Night - Input Color*** on page 41).
“Out of range” appears on-screen.	• The resolution and frequency of the video card in the computer are not compatible with the PlasmaWall.	• Select a compatible resolution and vertical frequency (refer to ***Computer/Video Signal Compatibility*** on page 59).
The image is too large or too small.	• Image size needs adjusting.	• Adjust the image size (refer to ***Input Position*** on page 39).

6. Serial Communications

6.1 RS-232 Connection and Port Configuration

To interface the PlasmaWall with a home theater automation/control system or a PC running terminal emulation software, connect it to the RS-232 output of the DHD Controller as shown in Figure 3-3. Connect your control system or PC to the RS-232 input of the DHD Controller as shown in Figure 3-9.

Configure the RS-232 controller or PC serial port as follows: no parity, eight (8) data bits, one (1) stop bit and no flow control. Set the baud rate to 19200, to match that of the DHD Controller RS-232 port.

6.2 Serial Command Syntax

Serial commands to the DHD Controller take the following form:

- Commands are not case-sensitive.
- For a single command that takes no parameters, type the command followed by a carriage return; for example, to set the aspect ratio to Letterbox, type `LETTERBOX <Enter>`.
- For a single command that takes a parameter, type the command, a space or a comma and the desired value followed by a carriage return; for example, to set the brightness to -10, type `BRIGHTNESS -10 <Enter>` or `BRIGHTNESS,-10 <Enter>`.
- You can also send a string of multiple commands on a single line, separated by commas. For example, `COMPOSITE,BRIGHTNESS 100,ANAMORPHIC <Enter>` switches to the Composite video input, sets the brightness to 100 and sets the aspect ratio to Anamorphic. Command strings can be up to 255 characters long.

Note *Avoid combining the* `ON` *or* `POWER 1` *commands with other commands on a single line. After sending* `ON` *or* `POWER 1,` *allow at least 15 seconds for the DHD Controller to power up. Once it does, it will accept and properly execute multiple serial commands.*

Table 6-1 lists the RS-232 command set. The “Parameter (min/max)” column shows the valid parameter ranges, or “NA” for commands that take no parameters.

When you enter a valid command, the DHD Controller executes it and acknowledges it with a plus sign on the command line (+ >). When you enter an invalid command – one that is misspelled or followed by values outside the valid range for that command – the DHD Controller ignores it and returns a minus sign (- >).

Table 6-1. Serial Commands

Command	Parameter (min/max)	Value Stored?	Description
Power On/Off Commands			
OFF	NA	NA	Turns system off
ON	NA	NA	Turns system on
POWER	0/1	NA	Turns system on or off (toggles on/off state)
POWER?	NA	NA	Returns power status

Table 6-1. Serial Commands (continued)

Command	Parameter (min/max)	Value Stored?	Description
Input Selection Commands			
COMPONENT	NA	YES	Selects the Component input
COMPOSITE	NA	YES	Selects the Composite video input
DVI1	NA	YES	Selects the DVI 1 input
DVI2	NA	YES	Selects the DVI 2 input
HD1	NA	YES	Selects the RGB HD 1 input
HD2	NA	YES	Selects the RGB HD 2 input
HD1PASS	NA	YES	Loops HD1 input to RGBHV output
HD2PASS	NA	YES	Loops HD2 input to RGBHV output
INPUT?	NA	NA	Returns active input
SVIDEO1	NA	YES	Selects the S-Video 1 input
SVIDEO2	NA	YES	Selects the S-Video 2 input
Aspect Ratio Commands			
ANAMORPHIC	NA	YES	Selects the Anamorphic aspect ratio
ASPECT?	NA	NA	Returns current aspect ratio
ASPECTIN?	NA	NA	Returns the input source aspect ratio
ASPECTOUT?	NA	NA	Returns output screen size
CINEMA	NA	YES	Selects the Cinema aspect ratio
LETTERBOX	NA	YES	Selects the Letterbox aspect ratio
STANDARD	NA	YES	Selects the Standard (4:3) aspect ratio
VIRTUALWIDE	NA	YES	Selects the VirtualWide aspect ratio

Table 6-1. Serial Commands (continued)

Command	Parameter (min/max)	Value Stored?	Description
Picture Adjust Commands			
BRIGHTNESS	-100/100	YES	Sets a value for brightness
BRIGHTNESS?	NA	NA	Returns brightness setting value
CHROMADELAY	-12/12	YES	Sets a value for input color chroma delay
CHROMADELAY?	NA	NA	Returns input color chroma delay setting
COLOR	-100/100	YES	Sets a value for color
COLOR?	NA	NA	Returns color setting value
CONTRAST	-100/100	YES	Sets a value for contrast
CONTRAST?	NA	NA	Returns contrast setting value
FILMMODE	0/1	YES	Sets Film Mode off (0) or on (1)
FILMMODE?	NA	NA	Returns Film Mode setting (0 = off; 1 = on)
FILTER	0/15	YES	Sets a value for input color noise filter
FILTER?	NA	NA	Returns input color noise filter setting
PHASE	0/3	YES	Adjusts phase
PHASE?	NA	NA	Returns phase setting value
SHARPNESS	-6/6	YES	Sets a value for sharpness
SHARPNESS?	NA	NA	Returns sharpness setting value
TINT	-100/100	YES	Sets a value for tint
TINT?	NA	NA	Returns tint setting value
Image Preset Commands			
CUSTOM1	NA	YES	Loads “Custom 1” image preset
CUSTOM2	NA	YES	Loads “Custom 2” image preset
DAY	NA	YES	Loads “ISF Day” image preset
NIGHT	NA	YES	Loads “ISF Night” image preset
PRESET?	NA	NA	Returns currently-selected preset (ISF Day, ISF Night, Custom 1 or Custom 2)

Table 6-1. Serial Commands (continued)

Command	Parameter (min/max)	Value Stored?	Description
Input Position Commands			
IHEIGHT	-100/100	YES	Sets the value for input height
IHEIGHT?	NA	NA	Returns input height value
IHPOS	-100/100	YES	Sets a value for horizontal input position
IHPOS?	NA	NA	Returns input horizontal position value
IVPOS	-100/100	YES	Sets a value for vertical input position
IVPOS?	NA	NA	Returns input vertical position value
IWIDTH	-100/100	YES	Sets the value for input width
IWIDTH?	NA	NA	Returns input horizontal width value
OVERSCAN	0/10	YES	Sets the overscan percentage
OVERSCAN?	NA	NA	Returns overscan percentage
Output Shift Commands			
OHEIGHT	-100/100	YES	Sets the value for output height
OHEIGHT?	NA	NA	Returns output height value
OHPOS	-100/100	YES	Sets the value for output horizontal position
OHPOS?	NA	NA	Returns output horizontal position value
OVPOS	-100/100	YES	Sets the value for output vertical position
OVPOS?	NA	NA	Returns output vertical position value
OWIDTH	-100/100	YES	Sets the value for output width
OWIDTH?	NA	NA	Returns output horizontal width value

Table 6-1. Serial Commands (continued)

Command	Parameter (min/max)	Value Stored?	Description
Miscellaneous Commands			
BKGND	-100/100	YES	Sets the background color for 4:3 aspect ratio (-100 = black; 100 = white)
BKGND?	NA	NA	Returns background setting value
DATE?	NA	NA	Returns product manufacture date
DISPLAY	1 or 2	YES	Sets display device input source (1 = RGB; 2 = DVI/HDMI)
DISPLAY?	NA	NA	Returns display device input source value
HDINPUTRES	NA	YES	Sets YPbPr input resolution and refresh rate for HD1/HD2, as follows: 0 = 480i 1 = 480p 2 = 576i 3 = 576p 4 = 720p / 60 Hz 5 = 1080i / 60 Hz 6 = 720p / 50 Hz 7 = 1080i / 25 Hz Any other value = Auto
HWVER?	NA	NA	Returns hardware version number
INRES?	NA	NA	Returns input resolution
OUTRES	0/5	YES	Sets output resolution, as follows: 0 = 480i 1 = 576i 2 = 480p 3 = 576p 4 = 720p 5 = 1080i
OUTRES?	NA	NA	Returns output resolution
RGBNN	NA	NA	Sets output color space to RGB with negative horizontal and vertical sync
RGBPP	NA	NA	Sets output color space to RGB with positive horizontal and vertical sync
RGBS	NA	NA	Sets output color space to RGB with composite sync
SWVER?	NA	NA	Returns software version number
TRIGGER	1/3	YES	Assigns trigger to currently-selected aspect ratio

Notes:

7. Specifications

7.1 PlasmaWall Specifications

Table 7-1 lists the PlasmaWall specifications.

Table 7-1. PlasmaWall Specifications

Native Resolution:	**PL-43DHD:** 1024 x 768 **PL-50DHD:** 1280 x 768
Screen Size (diagonal):	**PL-43DHD:** 43 inches **PL-50DHD:** 50 inches
Active Screen Area:	**PL-43DHD:** 37.375 x 21.125 in. (949.3 x 536.6 mm) **PL-50DHD:** 43.250 x 24.500 in. (1098.5 x 622.3 mm)
Screen Aspect Ratio:	16:9
Available Aspect Ratios:	Refer to Table 7-2
DTV Compatibility:	480p, 720p, 1080i
Contrast Ratio:	1000:1
ISF Settings:	Yes
Data/Graphics Compatibility:	Up to 1600 x 1200
Inputs:	(1) DVI 1.0 with HDCP (1) RGB/Component (15-pin D-sub) (1) RS-232 (9-pin, D-sub male) (1) Combination in/out (6-pin mini-DIN jack)
Power Requirements:	100 to 120 VAC, 50/60Hz 220 VAC (pre-set at the factory only)
Power Consumption (typical):	**PL-43DHD:** 380 W **PL-50DHD:** 480 W
Operating Environment:	32ºF to 104ºF (0ºC to 40ºC); 20% to 80% humidity (non-condensing)
Dimensions:	**PL-43DHD:** See Figure 7-1 **PL-50DHD:** See Figure 7-2
Weight:	**PL-43DHD:** 80.0 lbs. (36.29 kg) **PL-50DHD:** 96.0 lbs. (43.55 kg)
Regulatory Approvals:	Complies with FCC
Limited Warranty:	Three (3) years parts and labor from the date of delivery to the end user (except for plasma glass panel). Plasma Glass Panel: One (1) year parts and labor from the date of delivery to the end user.

Specifications are subject to change without notice.

7.2 DHD Controller Specifications

Table 7-2 lists the DHD Controller specifications.

Table 7-2. DHD Controller Specifications

Aspect Ratios:	4:3, Letterbox, 16:9 Anamorphic, VirtualWide, Cinema
Video Standards:	NTSC, PAL
Output Resolution:	480p, 576p, 720p, 840p, 960p, 1080i
Inputs:	(1) Composite; (2) S-Video; (1) Component; (2) HD-R (Pr), G (Y), B (Pb), H, V; (2) DVI with HDCP
Outputs:	(1) HD-R (Pr), G (Y), B (Pb), H, V (1) DVI-I with HDCP
Control Options:	- Discrete infrared remote - Serial commands via RS-232 - Front-panel controls
RS-232 Communication Parameters:	19200 bps, no parity, 8 data bits, 1 stop bit, no flow control
Trigger Outputs:	(3) +12 VDC, each rated at 750 mA and thermal fuse-protected
Bandwidth:	150 Mega Samples per Second (MSPS)
Power Requirements:	100 to 240 VAC (auto-sensing), 50/60 Hz, 160 Watts
Operating Environment:	41°F to 95°F (5°C to 35°C), 0% to 90% humidity (non-condensing)
Dimensions:	Width = 17.50 inches (444.5 mm) Depth = 11.19 inches (284.1 mm) Height = 3.75 inches (95.3 mm)
Weight:	13.0 lbs. (5.90 kg)
Regulatory Approvals:	Complies with FCC, CE C-Tick
Limited Warranty:	Two (2) years parts and labor from the date of delivery to the end user.

Specifications are subject to change without notice.

7.3 PlasmaWall Dimensions

Figure 7-1 and Figure 7-2 show the PlasmaWall dimensions (all dimensions are in inches).

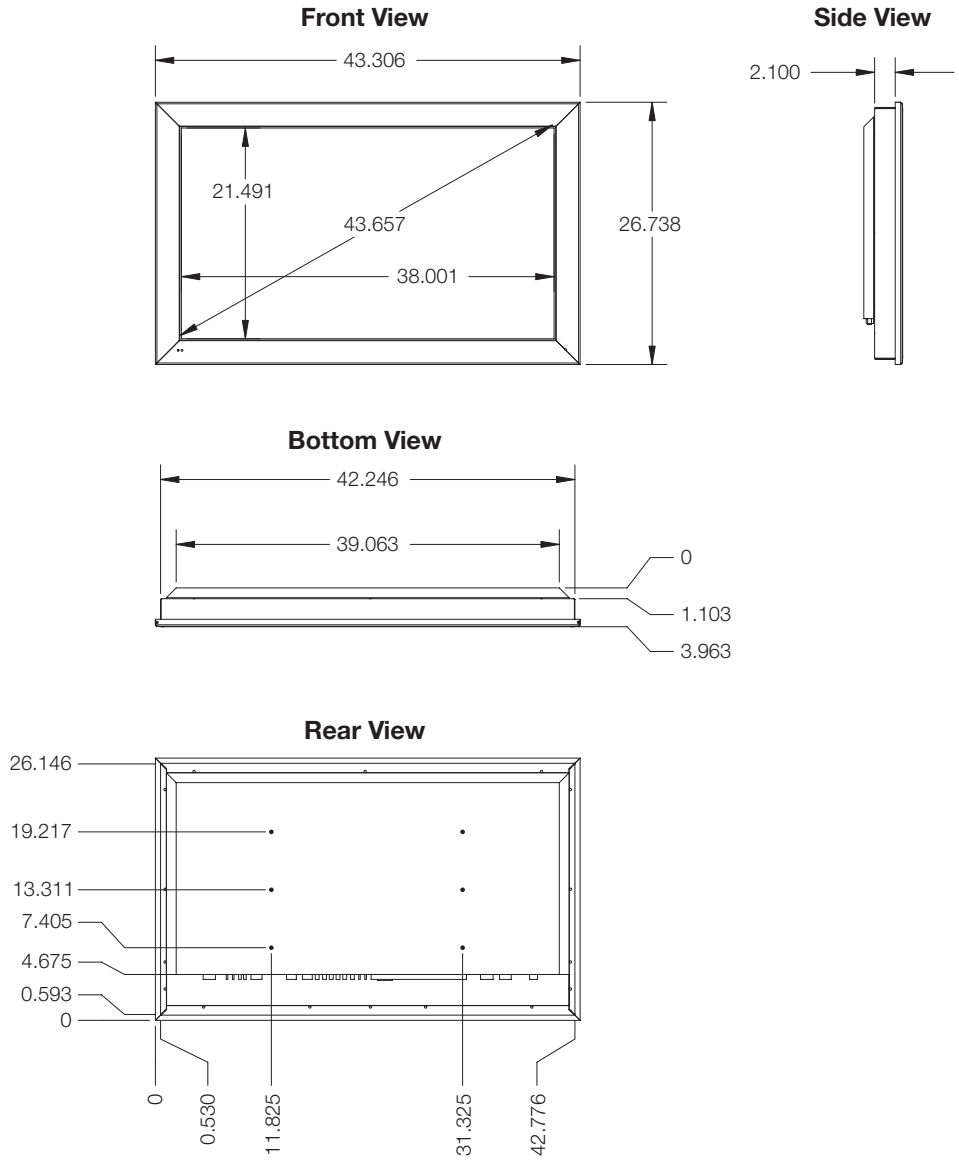


Figure 7-1. PlasmaWall Model PL-43DHD Dimensions

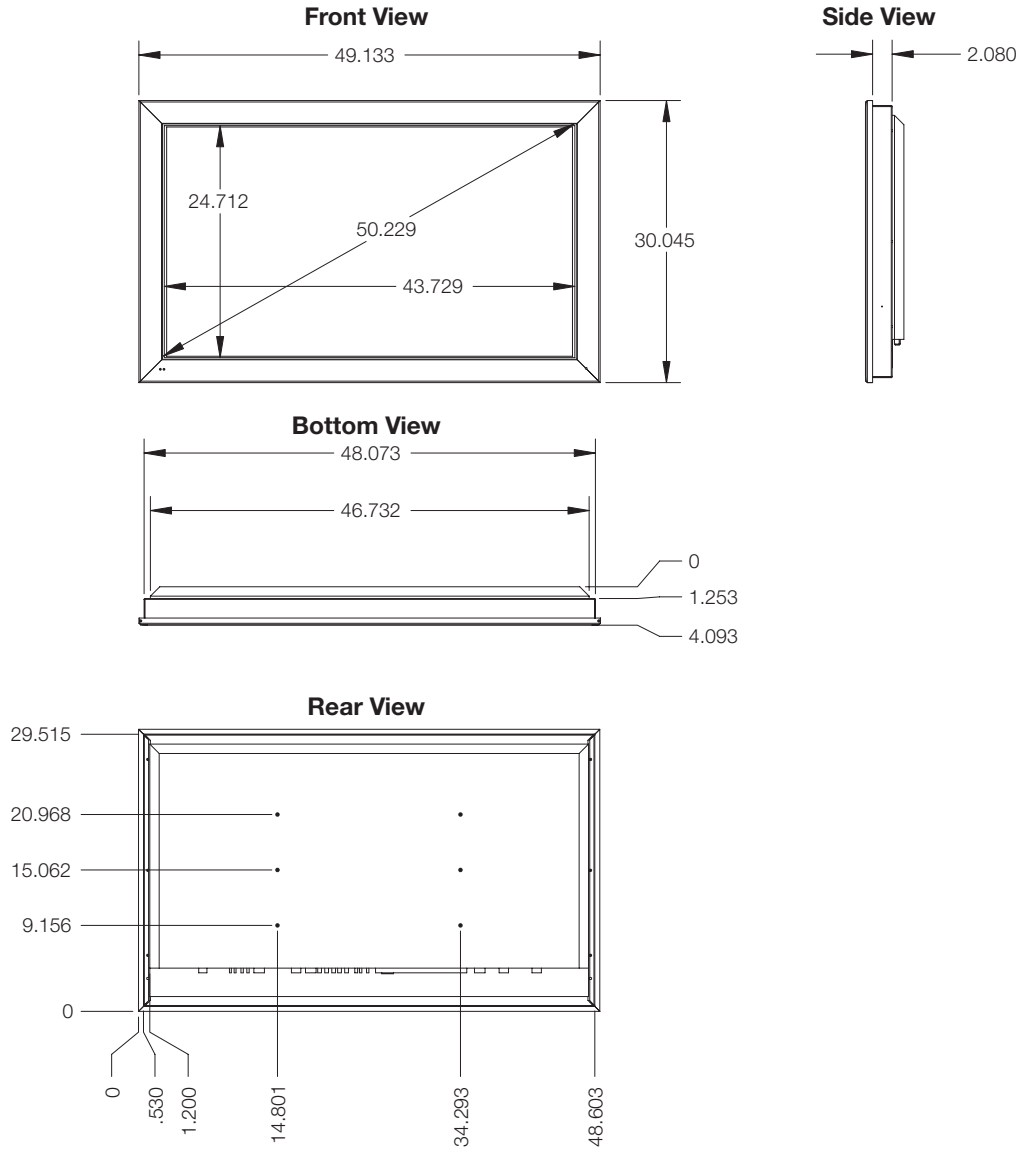


Figure 7-2. PlasmaWall Model PL-50DHD Dimensions

7.4 Computer/Video Signal Compatibility

The PlasmaWall can display video signals from a variety of computer sources via its RGB and DVI inputs.

Table 7-3 lists the signal types that are compatible with the PlasmaWall.

Table 7-3. Computer/Video Signal Compatibility Chart

Input Resolution (DotsxLines)	Refresh Rate		Display Quality (refer to Notes)		DVI Support	Remarks
	Vert. (Hz)	Horiz. (kHz)	PL-43DHD (1024x768)	PL-50DHD (1280x768)		
640x400	56.4	24.8	**	**	–	NEC PC-9800
720x400	70.1	31.5	**	**	–	NEC PC-9800
	85.1	37.9	**	**	–	
640x480	60.0	31.5	**	**	√	
	66.7	35.0	**	**	–	Apple Macintosh 13”
	72.8	37.9	**	**	–	
	75.0	37.5	**	**	–	
	85.0	43.3	**	**	–	
848x480	60.0	31.0	**	**	√	
800x600	56.0	35.2	**	**	√	
	60.0	37.9	**	**	√	(1072x600)
	72.0	48.1	**	**	–	
	75.0	46.9	**	**	–	
	85.0	53.7	**	**	–	
832x624	74.6	49.7	**	**	–	Apple Macintosh 16”
1024x768	60.0	48.4	*	**	√	(1376x768)
	70.0	56.5	*	**	–	
	75.0 (74.9)	60.0 (60.2)	*	**	–	( ) = Apple Macintosh 19”
	85.0	68.7	*	**	–	
1280x720	60.0	44.7	***	**	–	
1280x768	56.0	45.1	***	*	√	
	60.0	47.8	***	*	√	
	70.0	56.1	***	*	–	
1152x864	60.0	53.7	***	***	√	
	72.0	64.9	***	***	–	
	75.0	67.5	***	***	–	

Notes:

* = *Optimal picture; may require changing the aspect ratio using the Service Remote Control (refer to Appendix A).*

** = *Picture will be enlarged; some fine detail will be hard to see.*

*** = *Simple reproduction. Fine detail will not be reproduced.*

– = *Not supported.*

Table 7-3. Computer/Video Signal Compatibility Chart (continued)

Input Resolution (DotsxLines)	Refresh Rate		Display Quality (refer to Notes)		DVI Support	Remarks
	Vert. (Hz)	Horiz. (kHz)	PL-43DHD (1024x768)	PL-50DHD (1280x768)		
1152x870	75.1	68.5	***	***	–	Apple Macintosh 21”
1152x900	66.0	61.8	***	***	–	Sun Microsystems LO
	76.0	71.7	***	***	–	Sun Microsystems HI
1280x960	60.0	60.0	***	***	√	
1280x1024	60.0	64.0	***	***	√	
	75.0	80.0	***	***	–	(1600x1024)
	85.0	91.2	***	***	–	
1400x1050	60.0	65.3	***	***	√	
	75.0	82.3	***	***	–	
	85.0	93.9	***	***	–	
1600x1200	60.0	75.0	***	***	–	
	65.0	81.3	***	***	–	
	70.0	87.5	***	***	–	
	75.0	93.8	***	***	–	
	85.0	106.3	***	***	–	

Notes:

* = *Optimal picture; may require changing the aspect ratio using the Service Remote Control (refer to Appendix A).*

** = *Picture will be enlarged; some fine detail will be hard to see.*

*** = *Simple reproduction. Fine detail will not be reproduced.*

– = *Not supported.*

Appendix A. PlasmaWall Service Remote Control

A.1 Overview

The PlasmaWall system includes two remote control units: the standard DHD remote control (see Figure 2-5) and the Service Remote Control, shown in Figure A-1 and described in the paragraphs that follow.

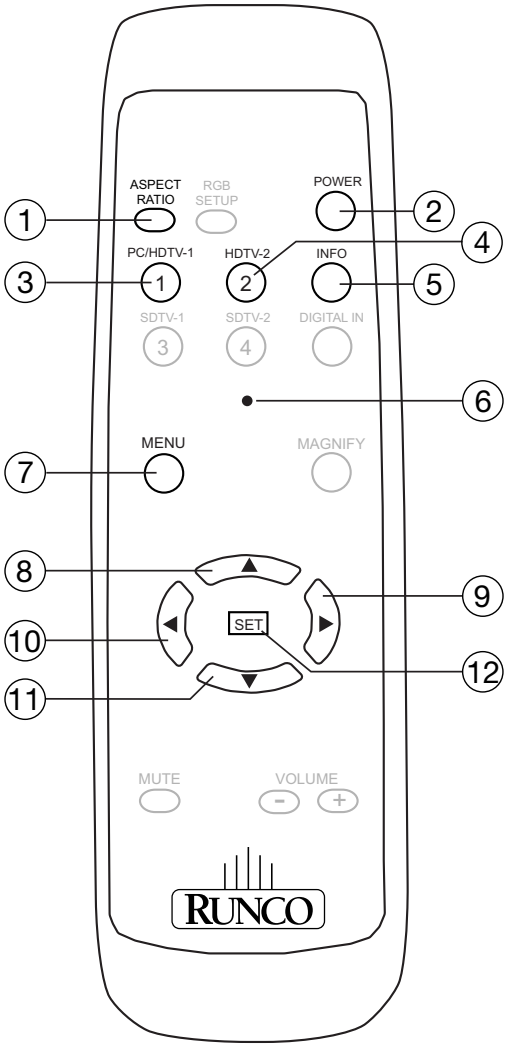


Figure A-1. PlasmaWall Service Remote Control

Note ***The PlasmaWall service remote control is intended for use only by authorized Runco dealers. Use it only as described here or as instructed to by Runco Technical Support.***

1. **ASPECT RATIO**
   Press this button repeatedly to select a display aspect ratio (this may be necessary with certain computer resolutions).
2. **POWER**
   Press to cycle the monitor between on and standby.
3. **PC/HDTV-1**
   Selects INPUT 1 (ANALOG RGB IN) on the PlasmaWall.
4. **HDTV-2**
   Selects INPUT 2 (DIGITAL RGB) on the PlasmaWall.
5. **INFO**
   Displays timing information for the current input signal.
6. **INSTALLER ADJUST (pin hole)**
   Used to access the INSTALLER ADJUST menu.
7. **MENU**
   Pressing the **MENU** button brings up the main menu. Also, if you are in an adjustment mode or function, pressing **MENU** brings the menu back one level.
8. **UP BUTTON**
   Use to move the menu cursor up in the On-Screen Display.
9. **RIGHT BUTTON**
   Used to move the menu cursor right in the On Screen Display.
10. **LEFT BUTTON**
    Used to move the menu cursor left in the On Screen Display.
11. **DOWN BUTTON**
    Use to move the menu cursor down in the On-Screen Display.
12. **SET BUTTON**
    When an item is highlighted on the On-Screen Display, the **SET** button selects the item.

A.2 Service/Setup Menu

Note *In order to use the PlasmaWall Service Remote Control, you must disconnect the PlasmaWall from the DHD Controller and connect a signal source to INPUT 1 on the PlasmaWall.*

For the vast majority of installations, the DHD Controller remote control gives you all the control you need over display quality settings. However, there are two settings internal to the PlasmaWall that can improve the displayed image quality on INPUT 1: VIDEO NR (noise reduction) and MPEG FILTER. These settings can be found in the Setup Menu, shown in Figure A-2.

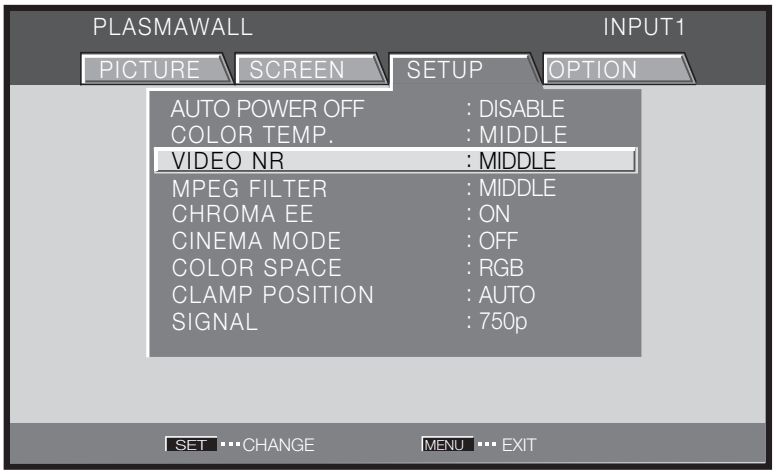


Figure A-2. PlasmaWall Setup Menu

To change the Noise Reduction setting on INPUT 1:

◄ ***Video NR (Noise Reduction)***

1. Press **1** to switch to PlasmaWall INPUT 1.
2. Press **MENU** on the PlasmaWall Service Remote Control.
3. Press ◀ or ▶ to select SETUP.
4. Press ▼ to select VIDEO NR, then press **SET**.
5. Press ◀ or ▶ to select the desired amount of noise reduction (OFF, LOW, MIDDLE or HIGH).
6. Press **SET** to confirm your selection.

To change the MPEG Filter setting on INPUT 1:

◄ ***MPEG Filter***

1. Press **1** to switch to PlasmaWall INPUT 1.
2. Press **MENU** on the PlasmaWall Service Remote Control.
3. Press ◀ or ▶ to select SETUP.
4. Press ▼ to select MPEG FILTER, then press **SET**.
5. Press ◀ or ▶ to select the desired amount of filtering (OFF, LOW, MIDDLE or HIGH).
6. Press **SET** to confirm your selection.

Notes:

SERIAL NUMBER

RUMA-010900
rev 04-13-06 v3.0

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